Final

COST OF SERVICE STUDY

SEPTEMBER 2017

City of San Clemente

CONTENTS

TABLES

FIGURES

GLOSSARY

TERM	DESCRIPTION
AF	Acre foot; 1 AF = 435.6 CCF; 326,000 gallons
AMP	Allen McColloch Pipeline
AWWA	American Water Works Association
Carollo	Carollo Engineers, Inc.
CCF	hundred cubic feet; 1 CCF = 748 gallons
CFS	cubic feet per second
CPI	Consumer Price Index
CIP	Capital Improvement Projects
CY	Calendar Year
City	City of San Clemente
FY (FYE)	Fiscal Year Ending: The City's fiscal year runs from July 1 to June 30. FYE is the year in which the fiscal year ends (i.e. FYE 2018 covers the fiscal year ending June 30, 2018).
GPCD	Gallons per capita per day
GPD	Gallons per day
GPM	Gallons per minute
LTM	Local transmission main system
M1 Manual	"Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices" published by the AWWA.
MEU	Meter Equivalent Unit: Commonly used to account for the increasing capacity needed to serve large meters. MEUs typically use a baseline meter size, often 3/4", and are calculated based on the relative maximum flow rate of that meter, measured in gallons per minute.
MFR	Multifamily residential customer class
MGD	Million gallons per day
MWD	Metropolitan Water District of Southern California
MWDOC	Municipal Water District of Orange County
O&M	Operations and Maintenance
PAYGO	Pay-As-You-Go Capital Funding
Potable Water	Water suitable to be consumed for drinking and other uses.
RTS	Readiness to serve fixed charge
RW	Recycled Water: Sewage treated to remove solids and impurities, and used for non-potable irrigation, commercial and industrial water needs.
SFR	Single family residential customer class
Sq. Ft. (ft^2)	Square feet
SWRCB	State Water Resources Control Board
UWMP	The City's 2015 Urban Water Management Plan
Variable Cost	Costs that change in proportion to volume of water sold or produced.
WIP	Water Importation Pipeline System

EXECUTIVE SUMMARY

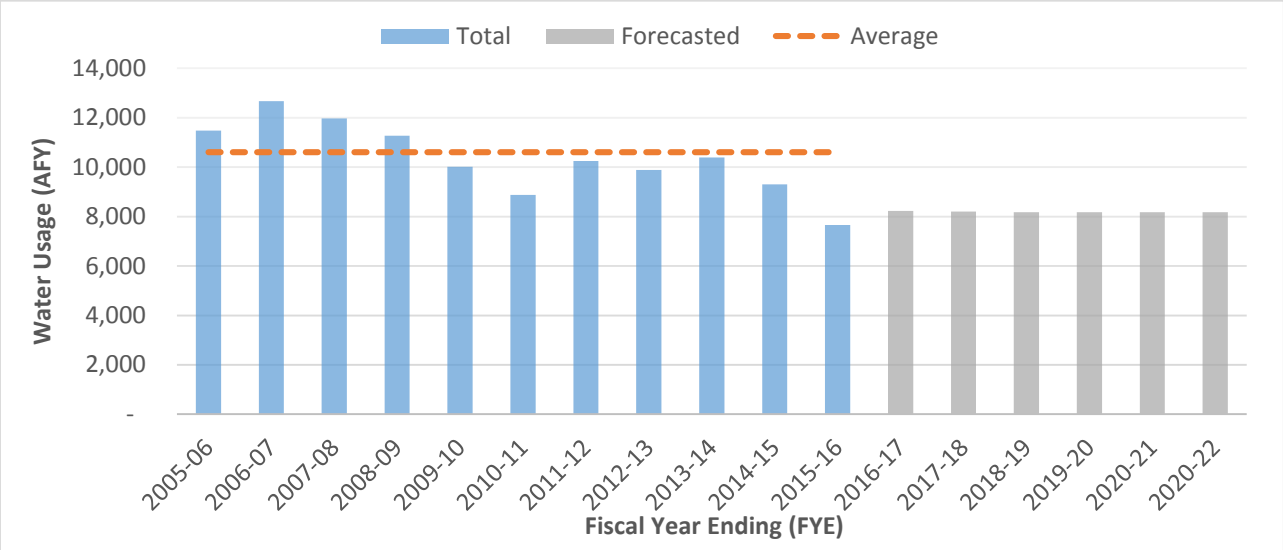
STUDY GOALS AND DRIVERS

The City of San Clemente retained Carollo Engineers (Carollo) to perform a comprehensive Cost of Service and Rate Study (Study) of the City's water enterprises, and to recommend rates for the upcoming five-year period from fiscal year ending (FYE) 2018 to 2022. To achieve this goal, Carollo's analysis was guided by standard industry best practices for cost of service analyses, as outlined by the American Water Works Association (AWWA), as well as the unique legal requirements for California, relevant California case law, and the City's specific water system. These factors framed the cost of service analysis detailed in this study.

Rate analyses are performed periodically to achieve several financial planning objectives. First, the process determines if revenues from rates are projected to adequately fund utility operations, maintenance, and necessary capital investments and upgrades. When rates are not expected to achieve these funding needs, revenue increases are modeled. The water enterprise supplies existing potable demand through groundwater and water purchases from the Municipal Water District of Orange County (MWDOC), a member agency of Metropolitan Water District of Southern California (MWD).

Second, the cost of service process has legal objectives as well. In California, water rates must adhere to the cost of service requirements imposed by Proposition 218 (California Constitution, Article XIII, section 6) and other state law and constitutional requirements. The City also has obligations to safeguard and preserve the State's limited water resources by encouraging conservation. While the City encourages conservation, falling water demands significantly impact the City's ability to fund operations and maintain existing rate levels. As the following figure demonstrates, demand in 2016 fell 26 percent from the 10-Year average and was 14 percent lower than the previous low set in 2010-2011. Additionally, the existing 3-tier rate structure leaves the City susceptible to changes in demands. For instance, in FYE 2016, single family's Tier 2 and Tier 3 sales dropped 40 percent, triggering an $800,000 revenue impact, or 6 percent of total rate revenue, in a single year. Under the existing rates, as usage decreases, revenues decrease in a larger proportion which results in significant revenue vulnerability.

FIGURE E-1 HISTORIC AND PROJECTED ANNUAL POTABLE WATER USAGE (ACRE FEET PER YEAR)



With the recent significant conservation, a full "bounce back" to historical averages is not anticipated. Instead, long-lasting demand changes and on-going water use efficiency will continue to effect water sales. Therefore, aside from a modest bounce-back in FYE 2017, aggregate demand is forecast to effectively hold flat in this analysis.

The major objective of this study is to develop a rate structure that:

- Fully funds operations and capital programs
- Mitigates revenue volatility and improves cost recovery options during drought
- Simplifies the existing rate structure
- Promotes water use efficiency
- Minimizes customer impacts
- Abides by cost of service standards

While this study focuses on the immediate near term (2018-2022), outer years are also analyzed and reviewed in order to gain a comprehensive understanding of possible extreme conditions that can occur beyond the 5-Year rate forecast period, and to anticipate and prepare for potential significant needs in years six through ten.

To achieve these multi-faceted goals, the cost of service approach tests the adequacy of existing revenues, recommends additional revenues where needed, and develops rates built on comprehensive cost allocation and customer data analyses.

WATER RATE ANALYSIS & ADOPTION

The rates recommended by this study were designed in the framework of the cost of service analysis results, and aim to address the City's rate-setting objectives. At the onset of the study, the City outlined the following rate structure objectives: clear and understandable; easy to administer; follows cost of service principles; provides revenue stability; considers affordability; and complies with legal requirements.

Existing Water Rate Structure

The City's existing water structure includes three rate tiers with summer and winter allocations. The winter months are designated as October through March, and summer months are designated as April through September.

The existing water rate structure includes two rate components:

- Fixed service charge based on a per meter equivalent unit (MEU). An MEU is based on the size and capacity of the meter and is an estimation of the potential demand, or capacity requirement, that the meter will place on the City's system.
- Variable, consumption-based rate per hundred cubic feet (CCF) of water sold and billed monthly.

The following tables detail the current rates, charges, and classes.

TABLE E-1 EXISTING WATER FIXED SERVICE CHARGE BY METER SIZE

METER SIZE	MEU CAPACITY FACTOR	WATER SERVICE CHARGE [1]
3/4"	1.00	$17.48
1-1/2"	1.00	39.31
2"	3.33	58.73
3"	5.33	114.16
4"	11.67	172.45
6"	21.00	330.91

Notes

1. Rates have been rounded up to the nearest $0.01.

All water customers are charged fixed service charges based on the service meter size. These fixed service charges are driven by costs independent of consumption. The fixed service charges funds system replacement costs, service and main line maintenance, and administrative expenses.

TABLE E-2 EXISTING WATER RATE SUMMARY– FYE 2017

CUSTOMER CLASS	TIER	CURRENT RATE [1]	WINTER ALLOCATION IN UNITS	SUMMER ALLOCATION IN UNITS
SFR: 0 - 7,000 ft² Lot	1	$2.86	0 - 9	0 - 9
	2	4.68	10 - 14	10 - 19
	3	10.06	over 15	over 20
SFR: > 7,000 ft² Lot	1	$2.86	0 - 9	0 - 9
	2	4.68	10 - 19	10 - 28
	3	10.06	over 20	over 29
MFR: Individually Metered	1	$2.86	0 - 6	0 - 6
	2	4.68	7 - 9	7 - 11
	3	10.06	over 10	over 12
MFR: Master Metered	1	$2.86	0 - 6	0 - 6
	2	4.68	7 - 9	7 - 10
	3	10.06	over 10	over 11
Commercial	Uniform	$4.00	N/A	N/A
Potable Irrigation [2]	1	$2.86	0 - .0463	0 - .0918
	2	4.68	.0464 - .1853	.0919 - .3673
	3	10.06	over .1853	over .3673
Non-Potable Irrigation	Uniform	$2.38	N/A	N/A

Notes

1. Current rate per billing unit. 1 billing unit = one-hundred cubic feet = 748 gallons.
2. Irrigation is based upon the quantity of water consumed per one 100 square feet of irrigated land.

Rate Recommendations

The recommended rate schedules are designed to recover the revenue requirement in a way that collects a proportionate share of costs from each customer class, while meeting the City's rate structure objectives. The proposed rate structure refines the City's existing structures to incorporate Staff, Council, and public input, changes in customer demands, and recent regulatory and legal frameworks. The details behind each of the rate recommendations, including any new components or structural changes, are outlined within this report.

Various financial scenarios have been developed to balance financial stability and customer impacts. To set a clear path towards aligning costs, increasing reserves, and managing decreased water sales, Carollo recommends a five-year rate structure with annual rate increase from FYE 2018 to FYE 2022 by 12%, 9%, 9%, 3%, and 2% respectively. The following tables outline the proposed water rates and charges for the potable water enterprise to achieve this progress.

TABLE E-3 PROPOSED WATER MONTHLY SERVICE CHARGE – FYE 2018

		PROPOSED RATE [1]				
CHARGE	METER SIZE	FYE 2018	FYE 2019	FYE 220	FYE 2021	FYE 2022
Monthly Service Charge by Meter Size	1" or smaller	18.71	21.87	25.33	26.56	27.41
	1-1/2"	46.17	53.97	62.49	65.53	67.62
	2"	69.70	81.47	94.34	98.93	102.09
	3"	144.23	168.59	195.19	204.70	211.23
	4"	254.07	296.96	343.83	360.58	372.08
	6"	516.89	604.14	699.48	733.56	756.96

Notes

1. Rates have been rounded up to the nearest $0.01.

The proposed water rates below reflect the finding of a detailed customer data analysis as well as cost allocation process. The recommendations are also reflective of the City's desire to simplify the existing rate structure and provide greater revenue stability.

Each customer class is proposed to have a uniform rate that varies by class. The variance in unit costs reflects how each customer class uses the system differently (peaking versus base usage). An additional rate structure option is also presented for SFR, a proposed two-tier rate based on the class' relative homogeneous nature, with peaking costs allocated to those users that enter tier 2.

TABLE E-4 PROPOSED WATER RATES – FYE 2018

			PROPOSED RATE [1]				
CUSTOMER CLASS	TIER	UNITS	FYE 2018 [2]	FYE 2019	FYE 220	FYE 2021	FYE 2022
SFR	Tier 1	0 - 9	$3.91	$4.11	$4.34	$4.42	$4.48
	Tier 2	10 +	$4.77	$5.12	$5.50	$5.64	$5.74
SFR*	Uniform	N/A	$4.17	$4.42	$4.69	$4.79	$4.85
MFR*	Uniform	N/A	$4.04	$4.26	$4.51	$4.60	$4.66
Commercial Potable*	Uniform	N/A	$4.05	$4.28	$4.53	$4.62	$4.69
Irrigation Potable*	Uniform	N/A	$4.66	$5.06	$5.52	$5.66	$5.75

Notes

1. Current rate per billing unit. 1 billing unit = one hundred cubic feet = 748 gallons.
2. Rates have been rounded up to the nearest $0.01 and will be effective January 1st of each Fiscal Year.

* Two structures were presented for SFR; however, a uniform rate structure reflects staff and consultant recommendations that were confirmed at the September 5th (2017) Council presentation.

Other rate alternatives such as only uniform rates, seasonal rates, and water budget rates were reviewed to encompass a variety of available alternatives to achieve key objectives. Carollo recommends implementation of uniform rates by customer class to bolster fiscal stability and more appropriately reflect the falling demands in the City's rate structure. The following changes to the rate structure are summarized as the following:

- Elimination of seasonal tier adjustments
- Combining SFR into one residential customer class
- Following a September 5th (2017) Council Recommendation, selection of either a uniform rate for SFR and remaining classes (including potable irrigation)
- Fixed charge is increased and phased in over three years in order to ensure sufficient fixed cost recovery and reduce the City's vulnerability to declining water demands
- Decoupling pass-through purchased water costs to limit potential cost recovery risk
- Demand management rates during times of mandatory water conservation provide greater cost recovery flexibility under future demand conditions

Pass-Through Costs

In addition to reviewing the City's internal cost recovery, the City is able to pass-through purchased water costs to its rate payers. Pass-through rates can be decoupled and implemented in accordance with AB 3030 (Government Code § 53756). By decoupling these potential cost increases from the City's typical rate-setting process, the City can increase cost recovery and maintain more accurate rates. Additionally, this methodology discloses the actual cost of purchased water to the ratepayers. Each year, based on the various source of supply costs (currently from MWDOC), the City will calculate total water costs and total assumed demands. The current (FY 2017) unit cost for the pass-through rate is $2.68 per CCF.

$$PassThrough = \frac{Total\ Water\ Cost}{Forecasted\ Demand} = \frac{\$8.10\ M}{6,957\ AF} = \frac{\$1,164}{AF} = \$2.68\ per\ CCF$$

Demand Management Rates

Demand rates are rate surcharges that can be implemented in time of need to safeguard cost recovery. The City, like many California agencies, experienced a significant demand drop not just during the multi-year drought, but also in the preceding years, as customers adopted water conservation technologies and habits. Carollo's rate-setting approach places a high priority on resiliency, and conducting sensitivity analyses to see that rates will be sufficient as modeled under alternative scenarios, particularly under a low-demand scenario, such as during a drought, water shortage emergency, or state mandated reductions in water use. Decreased demand can undermine the reliability of rate revenue, leaving the agency to find cost savings, absorb the decreased cash flow, or further increase rates. The projected demand revenue requirements and proposed rate are shown in the following table.

Accordingly, Carollo analyzed three decreased water demand scenarios – 5 to 10 percent, up to 20 percent, and greater than 20 percent reductions in water demands from FYE 2018 demands. The City may introduce the proposed demand rates in concert with the existing rate schedule during required or observed usage reductions. These demand management rates would only be implemented at direction of the City Council if it determines implementation is necessary to maintain the financial stability of the water utility or potentially in concert with the City's Water Conservation Ordinance No. 1598 § 3 Section 13.13.050.

TABLE E-5 WATER DEMAND MANAGEMENT RATES 6

	5% TO 10% REDUCTION (1)	UP TO A 20% REDUCTION	GREATER THAN A 20% REDUCTION
Fixed Rate ($/meter equivalent)	$0.00	$0.74	$0.74
Variable Rate ($/CCF)	$0.19	$0.30	$0.57

Notes

1. Rates have been rounded up to the nearest $0.01.

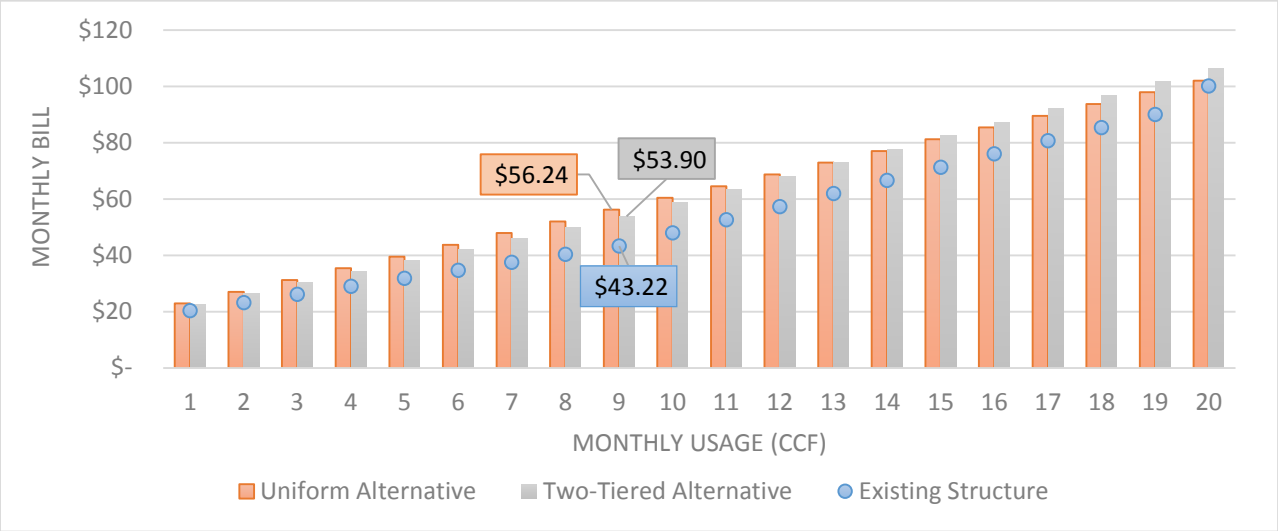
Depending on the level, the proposed demand management rates are split between fixed and variable revenue sources. The rates are calculated on a uniform unit cost basis and do not differ by tiers or customer classes. The surcharge is added on to each unit cost of water and to each meter equivalent.

Water Customer Impacts

Overall bill impacts are dependent upon water demand. Throughout the rate-setting process, customer understanding and customer acceptance is paramount. As such the proposed rates are streamlined and updated to reflect current customer demands and impacts on the system. This simplification and adjustment to rates, however, impacts all customers at varying levels. Not only will the impact differ based on the selected SFR rate structure, but also vary based on the customer's meter size, usage, and services provided. The

following figure illustrates the expected water bill impact for a water residential customer with a 1-inch meter and 9 CCF monthly usage. This represents about 95 percent of customers since only 5 percent of customers use over 20 CCF per month.

FIGURE E-2 BILL IMPACT EXAMPLE FOR 1-INCH METER, 9 CCF MONTHLY USAGE WATER RESIDENTIAL CUSTOMER



RECYCLED WATER RATE ANALYSIS & ADOPTION

Rate Recommendation

In addition to the potable water rates, Carollo also calculated the recycled water (RW) fund for revenue sufficiency. Just as with the water enterprise, RW expenditures must align with use and revenues to provide that RW customers are paying for RW only. Carollo recommends a five-year rate structure with the same annual rate increase from FYE 2018 to FYE 2022 by 12%, 9%, 9%, 3%, and 2%, respectively, in order to be self-sufficient. In general, the overall bill impact will reflect that of the proposed revenue adjustment.

TABLE E-7 PROPOSED RECYCLED WATER RATE

	TIER	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Recycled Water Rate ($/CCF) (1)	Uniform	$2.66	$2.87	$3.11	$3.21	$3.29

Notes

1. Rates have been rounded up to the nearest $0.01.

This rate study used methodologies that are aligned with industry standard practices for rate setting as endorsed by AWWA, and applicable law, including Proposition 218. The proposed revenue adjustments recommended are forecasted to take effect on January 1, 2018. The proposed rates are designed based on cost of service principles and designed to encourage the City's objectives of revenue sufficiency, stability, and promotion of water use efficiency. These rates also contribute toward the City's ability to comply with the requirements of the State's mandated demand reductions while providing significantly greater recognition of fixed expenditures. The proposed adjustments offer a simplified schedule designed to provide revenue stability and continue to equitably and proportionately recover costs from water customers.

1 Introduction

CITY OF SAN CLEMENTE

Service Area Overview

The City provides water service to approximately 65,000 residents along the southern coast of Orange County, California. Along with the City's water utility, Santa Margarita Water District provides water and wastewater services to the Talega community of San Clemente, and the South Coast Water District provides water and wastewater services to a small portion of north San Clemente. The City's water system consists of 13 service zones defined by reservoirs and 20 sub-zones through pressure reducing stations.

The City maintains approximately 206 miles of distribution system piping, 16 pumping stations, 56 pressure reducing stations, one filtration plant, 14 local and two regional reservoirs, and two wells. The City draws water from several sources, including groundwater from City wells, imported water from the Metropolitan Water District of Orange County (MWDOC),[1] and recycled water. The majority of the community's potable water supply is imported through purchases from MWDOC. MWDOC is the City's wholesale imported water supplier and is a member of the Metropolitan Water District of Southern California (MWD). In FYE 2016, the City's water supply mix consisted of 85 percent imported water, 6 percent groundwater from the San Clemente Sub-Basin, and 9 percent recycled water. The water supply mix is expected to shift to more recycled water use as a result of the City's recycled water treatment facility expansion.

Most of the City's water supply is imported through either the Local Transmission Main (LTM) System or the Water Importation Pipeline (WIP) System, both originating at MWD. The City has 14.78 cubic feet per second (cfs) capacity through the LTM, and 15.00 cfs ultimate capacity through the WIP. The WIP capacity is limited to 6.70 cfs until 2016, or until the City purchases additional capacity in the Allen McColloch Pipeline (AMP).[2] In 2014, the City completed a major expansion of its recycled water distribution system. With this improvement, recycled water provides a key tool in the community's strategy for reducing imported water and using our water resources efficiently.

STUDY PURPOSE AND KEY DRIVERS

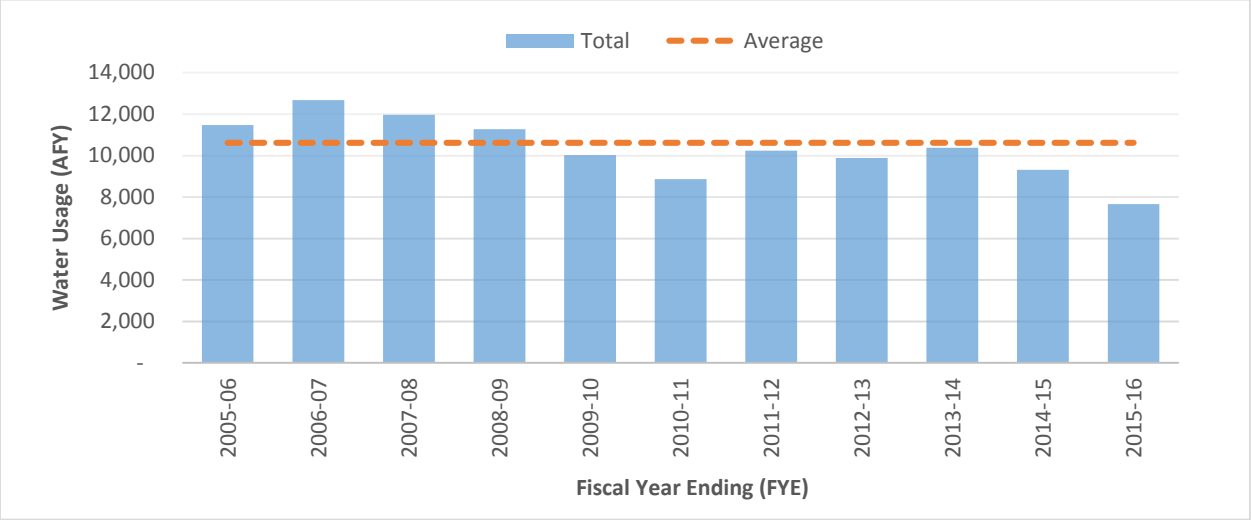
The City retained Carollo to perform a comprehensive Cost of Service and Rate Study of the City's water system and to recommend rates for the upcoming five-year period from FYE 2018 to 2022. To achieve this goal, Carollo's analysis was guided by industry best practices for cost of service analyses, as outlined by the American Water Works Association (AWWA), the unique legal requirements for California, relevant California case law, and the City's specific water system and usage characteristics. These factors framed the cost of service analysis, which necessitate a review of existing rates and charges.

[1] MWDOC is a member agency of MWD.
[2] San Clemente Water Supply Conditions and Drought Information.

Declining Water Demands

Falling water demands significantly impact the City's ability to fund operations and maintain existing rate levels, as discussed further below, in part because the City continues to incur fixed costs that do not decrease with water demands along with increased imported water prices. As the following figure demonstrates, demand in 2016 fell 26 percent from the 10-Year average and was 14 percent lower than the previous low set in 2010-2011.

FIGURE 1-1 10-YEAR HISTORICAL ANNUAL POTABLE WATER USAGE (ACRE FEET PER YEAR)



Additionally, the existing 3-tier rate structure leaves the City susceptible to changes in demands. For instance, in FYE 2016, the single family residential Tier 2 and Tier 3 sales dropped 40 percent, triggering an $800,000 revenue impact or 6 percent of total rate revenue in a single year. Under the existing rates as usage decreases, revenues decreases in a larger proportion which results in significant revenue vulnerability.

The major objective of this study is to develop a rate structure that:

- Fully funds operations and capital programs
- Mitigates revenue volatility and improves cost recovery options during drought
- Simplifies the existing rate structure
- Promotes water use efficiency
- Minimizes customer impacts
- Abides by cost of service standards

The Study reviews and contemplates recommendations based on a five-year time horizon. While five years of rates are proposed, the financial analysis forecasted 10 years to gain a comprehensive understanding of possible capital needs that can occur outside of the Study period. The proposed plan is designed to mitigate the need for any large, isolated single year rate or revenue adjustments.

To achieve the multi-faceted goals—rates that must simultaneously be equitable and reasonable, as well as provide a message of conservation—Carollo's cost of service approach tests the adequacy of existing

revenues, recommends additional revenues where needed, and develops rates built on comprehensive cost allocation and customer data analyses.

STUDY CHALLENGES AND POLICY GOALS

Rate Study Policy and Legal Considerations

Like virtually all agencies in California, the City faced the consequences of the prolonged drought that ended this year. However, this prolonged drought presented water retailers with multiple challenges in their day-to-day operations, including increased imported supply costs due to water shortages, additional restrictions on groundwater production, substantial (25+ percent) demand reductions by customers throughout the state, and significant reductions in revenue. These factors significantly increased the level of uncertainty in the City's operational and financial planning.

This uncertainty underscores the need for comprehensive and flexible rate design. At the outset of the Study, Carollo and the City held a public workshop to discuss key Study goals, and to establish a transparent rate setting process. Based on the objectives outlined in this workshops, the Study would:

- Review the current financial plans for the City's retail water system and consider opportunities to improve long-term financial stability.
- Evaluate and develop policy recommendations for the existing water rate structures to achieve the objectives of the City.
- Thoroughly document the cost of service analysis, including the functional allocation and classification of costs, and the allocation of costs among customer classes.
- Prepare a rate design framework that proportionately recovers costs from the City's customers, and meets the goals outlined above.

These objectives are crucial for balancing the legal, operational, and financial considerations that the City must make when setting rates, and should allow the City to maintain its excellent level of service.

This Study identifies what actions the City should implement to maintain the financial viability of the system in light of changing consumer demands, increasing purchased water costs, regulatory requirements, and needed future infrastructure investments. Rates are typically designed to achieve multiple objectives. While industry standards provide a basis for testing the reasonableness of proposed rates, this basis does not on its own meet legal requirements—particularly the unique legal requirements for agencies in California. This Study takes into account both industry standards and applicable legal requirements, including the requirements set forth in California Constitution, Article XIII D, section 6 (part of Proposition 218).

Within the cost of service approach and legal requirements, an agency's policy determinations (e.g. rate design, proportion of fixed revenue, and use of reserves) form the basis of the detailed rate structure design elements, making it distinct to the agency and the community it serves. Within the City's rate structure, these policies encompass the entire structure including the selection of rate design, methodology for allotting the amount of water use within customer tier allocations, and how costs are allocated to target water waste. With its rate structure, the City is able to satisfy its policy objectives and cost of service requirements.

Specific Focus Areas for Rate Structure Changes

In addition to the general objectives outlined above, the City and Carollo identified several specific focus areas for the Study that aim to address several common questions with the current rate structure. More detail on each of these topics is covered within this report. In addition to the items below, Carollo also focused on potential adjustments to the City's fiscal policies, use of reserves, and many others.

Rate Structure Simplification

The City currently maintains a seasonal tiered rate structure. There is also lot designations based on square footage for the single family residential class, and a distinction for the multifamily residential class based on meter type (individually metered dwelling units, or master metered complexes with one meter). While this structure has served the City well to date, simplifications were a priority for the City at the outset of the Study, largely in response to the revenue volatility of the past two years. Simplifying this rate structure could also improve ease of understanding for both staff (administration) and customers. As part of this Study, Carollo analyzed historical demand patterns, and recommendations for these customer classes are outlined further in this Study.

Fixed Cost Recovery Adjustments

Based on 2015 water sales, a year with reduced water sales, the City collected approximately 23 percent of its annual water system revenues through fixed service charges, but the City's fixed costs incurred in maintaining the water system and ensuring the ability to provide water service, regardless of the amount of water a customer may use, are approximately 42 percent of its cost of service.

This lower fixed revenue recovery has created revenue vulnerability for the City given decreasing water demands. Separately, a line-item review of system expenditures revealed that the majority of the City's expenses are fixed in nature, and increasing this percentage could bolster the water system's financial resiliency. These fixed costs are system depreciation (or related repair and replacement costs), salaries and benefits, and other O&M costs that support day-to-day operations.

Demand Management Rates

Demand rates are additional rates (potential surcharges) that can be implemented in time of need to safeguard cost recovery. The City, like many California agencies, experienced a significant demand drop not just during the multi-year drought, but also in the preceding years, as customers adopted water conservation technologies and habits. Carollo's rate-setting approach places a high priority on resiliency. The Study conducted sensitivity analyses to see if rates will be sufficient as modeled under alternative scenarios, particularly under a low-demand scenario, such as during a drought, water shortage emergency, or state mandated reduction in water use. As the City is not looking to recovery 100 percent of fixed costs on the fixed charge, decreased demand can undermine the reliability of rate revenue, leaving the agency to find cost savings, absorb the decreased cash flow, or further increase rates.

Pass Through Cost Recovery

In addition to reviewing the City's fixed and variable cost recovery, it would benefit the City to consider utilizing the provisions of Government Code section 53756 to automatically pass through wholesale water costs as yet another mechanism for revenue stability. By decoupling this potential cost increase from the City's typical rate-setting process, the City will be able to increase cost recovery and maintain more accurate rates. If the rates are not decoupled, the City would need to make assumptions regarding these potential increases over the next five years, potentially increasing the rates beyond what is necessary.

Recycled Water Cost Recovery

The recycled water system currently has substantial capital expenditures planned for the coming years, as well as debt service incurred to expand the system to its current size. The City tracks recycled water costs separately from potable water and aims to achieve the recycled water system's funding goals, while still providing a cost-effective option for non-potable water users. The Study reviewed the future funding for recycled water (absent potable) and the recommended rates.

OVERVIEW OF THE RATE SETTING PROCESS

Rate analyses are performed periodically such that revenues from rates adequately fund utility operations, maintenance, and necessary capital investments and upgrades, and the appropriate rates to fairly and appropriately allocate the costs of providing water to customers and among the various customer classes.

In California, water rates must adhere to the cost of service requirements imposed by Proposition 218 and the State Constitution. Article XIII D, section 6 of the California Constitution (commonly referred to as Proposition 218) requires that property related fees and charges, including water rates, do not exceed the reasonable and proportional cost of providing the service.

The City also has obligations to safeguard and preserve the State's limited water resources. Article X, § 2, of the State Constitution establishes the need to preserve the State's water supplies and discourage the wasteful or unreasonable use of water by encouraging conservation.

Revenue Requirement Analysis
Compares existing utlity revenues to its operating, capital reserves, and policy driven costs to establish the adequacy of existing cost recovery levels.

Functional Cost Analysis
Identifies and apportions annual revenue requirements to functional rate components based on its application of the utility system.

Water Demand Analysis
Forecasts water sales based on historical billings, modifications to the rate structure, and any regulatory restrictions.

Rate Design Analysis & Calculation
Considers both the level and structure of the rate design to collect the distributed revenue requirements from each class of service.

Rate Adoption
Compliant with the Proposition 218 requirements, the Study presents the rationale and justification behind the changes.

To achieve these multi-faceted requirements - rates that must simultaneously be equitable and reasonable, as well as provide a conservation message - Carollo's cost of service approach tests the adequacy of existing revenues, recommends additional revenues where needed, and develops rates built on comprehensive cost allocation and customer data analyses.

The processes presented below are advocated by the AWWA and the Water Environment Federation (WEF) for water rate setting. Carollo has adapted this reference material and combined it with specific California rate setting requirements to reflect the City's specific water infrastructure and demands. While the process is described in a linear step by step approach, it is better understood as an iterative process where the ultimate objective is to balance revenues with costs in an equitable and proportional manner for customers.

Step-By-Step Approach

When conducting the cost of service analysis, Carollo used a five-step approach, taking into consideration the relevant legal standards and industry guidelines summarized above. Each step in this process shapes the subsequent step, ultimately resulting in a fair, equitable, and well-documented rate calculation. While the process is shown in a linear step-by-step approach, this is actually an iterative process where the ultimate objective is to balance revenues with costs.

Revenue Requirements Analysis

The methodology applied to establish annual rate revenue needs is consistent with industry standards established by the *Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1* (M1 Manual), which is published by AWWA, a national industry trade group that makes recommendations on generally accepted practices in the water industry. The revenue requirements analysis compares the forecasted revenues of the utility to its forecasted operating and capital reserve costs to determine the adequacy of the existing rates to recover the utility's costs. If any shortfalls exist, rates may need to increase.

Water Demand Analysis

Forecasting water sales and purchases is a critical component in the rate setting process. As part of the budget process, the City forecasts the expected water usage based on historical demand, proposed changes to rates, regulatory impacts, weather, and other variables. These forecasted water demands are then compared against forecasted revenue requirements and rates are developed in order to recover costs. Future demands are based on historic sales and escalated for projected growth and per capita demand changes.

Functional Cost Analysis

After determining the revenue requirement, the next step in the analysis is to outline the cost to deliver each unit of water and to serve each customer. This process takes each item in the water system's budget and allocates the items based on what function is served. For example, some cost items support the ability to deliver additional, expensive water, while other costs are incurred to provide customer service or to fund capital replacement. Organizing the budget in terms of end function allows creation of a direct nexus between the budget item and the rate, bridging the cost incurred by the City and the unique and varied benefits delivered to each customer.

Rate Design Analysis & Calculation

The rate design involves developing a rate structure that proportionately recovers costs from customers. The rate structure must be tailored to the customer demand and account profile, built upon a nexus among customer classes (i.e., single-family residential and commercial) and the rates that customers are charged on a parcel basis, resilient enough to handle changing cost and demand scenarios, and flexible enough to meet multiple other unique criteria. For example, in the potable water system, water supply costs are recovered based on the units of water sold (demand), while service costs are recovered based on the size of a customer's meter and, therefore, allocated based on the total number of meter equivalents, which accounts for the number and hydraulic capacity of the meters served.

The rate design allows the City to develop unit costs that can then be layered based on requirements to meet customer needs. This is a critical process for establishing tiered rates, as increasing usage incurs additional costs making excess water more expensive to maintain and provide.

The final part of the rate design analysis is the rate calculation. This provides the nexus between the revenue requirements, the functional cost allocation, and the final rates that customers are charged. This

process connects planned expenditures to the designed rates by establishing rates to match the estimated revenue generation with expenditures.

Rate Adoption

To comply with the requirements of Proposition 218, the results of the revenue requirement analysis, functional costs analysis, water demand analysis, and rate design analysis are documented in this Study to, provide the rationale and justifications behind the proposed rate changes and the anticipated financial impacts. While the document should be accessible to a layperson's understanding, it must still provide sufficient detail to fully support and document the rate setting process.

In order to adjust rates, the City must provide a written notice 45 days prior to adoption of the rates. During this 45 day notice period, any property owner or tenant directly responsible for the payment of water service fees may submit a written protest to the proposed rate increases. If written protests against the proposed rate increases are not presented by a majority of affected property owners or customers, the City Council will be authorized to adopt the rate increases.[3]

As the following sections of this Study will demonstrate, this step-by-step approach creates a fair and equitable foundation for each charge and rate that the City levies to proportionally recover system costs from the City's customers.

Forward Looking Statement

The calculations and forecasts of this analysis are based on the reasonable projection of existing service costs, water demands, and system operations with information available, and on existing legal requirements. Such forecasts are subject to risks and uncertainties, which could cause actual results to differ materially from those anticipated. While the proposed rates are forecasted over a five-year period, the City should revisit the cost of service analysis if material changes occur from the assumed inputs for this analysis, such as changes to the City's water supply costs, demands, changes occurring in specific California law governing water agencies, or further regulatory actions by the Governor or the State Water Resources Control Board (SWRCB) in regard to water supply and usage.

[3] Majority is 50 percent of the City's customers, plus one customer.

2 Revenue Requirement Analysis

WATER REVENUE REQUIREMENTS

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

Carollo compiled all of the City's FYE 2017 budget expenses as the base year for O&M costs. Furthermore, Carollo collected information related to current cash and restricted fund balances and policies, the budgeted capital improvement plan expenditures, and all other operating and non-operating future revenues and expenditures.

Once the revenue requirement is established by compiling all of the agency's cost drivers, a cash flow sufficiency test is typically utilized to define the annual revenues necessary. The cash flow sufficiency test looks for a net positive cash flow at the end of each fiscal year. This test looks at whether revenues exceed expenses; when they do not, this test recommends additional revenue.

BASELINE INPUTS

Water System Profile

To develop baseline input, Carollo analyzed the City's billing records from the previous five-years. Given the dramatic change in customer demands and the continued mandate by the state to curb demands, 2016 customer demands were assumed as baseline demands.

The following table details customers of the water system.

TABLE 2-1 WATER SYSTEM PROFILE

CUSTOMER CLASS	NUMBER OF ACCOUNTS	NUMBER OF METER EQUIVALENTS	CY 2016 DEMAND [1]
Single Family Residential (SFR): [2] <7,000 ft² Lot	8,797	8,807	939,116
SFR: > 7,000 ft² Lot	3,426	3,552	562,396
Multifamily Residential: Mastered Meter	1,691	2,898	435,332
Multifamily Residential: Individual Meter	1,904	1,939	97,063
Commercial Potable	881	2,577	330,944
Irrigation Potable	386	1,671	427,912
Irrigation Non-Potable [3]	57	250	N/A
Total	**17,142**	**21,695**	**2,792,763**

Notes

1. Measured in billing units of one hundred cubic feet (CCF).
2. SFR, MFR, and Irrigation Potable customers have tiers and are segregated for analysis based on EDUs and demand.
3. Irrigation Non-Potable demand is not included in the analysis or proposed rates.

OPERATING AND CAPITAL BUDGET PROJECTIONS

Operating Revenues and Expenses

This analysis began with forecasting future revenues and expenditures from the City's FYE 2016 budgeted revenues and expenditures.

TABLE 2-2 ESCALATION FACTORS

ESCALATION FACTOR	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Operations	3.0%	3.0%	3.0%	3.0%	3.0%
Labor	3.0%	3.0%	3.0%	3.0%	3.0%
Energy	3.0%	3.0%	3.0%	3.0%	3.0%
Chemicals	3.0%	3.0%	3.0%	3.0%	3.0%
Construction / Capital	3.0%	3.0%	3.0%	3.0%	3.0%
Water Cost	*No increases assumed. Actual increases to be passed through.*				
Metered Demand	2.8%	0.0%	0.0%	0.0%	0.0%

The escalation factors used in this analysis are based on input from City's staff, and a review of both the long-term and recent cost escalation from the Engineering News and Record Index, an industry benchmarking resource. Other costs were escalated based on recent cost trends for that category, such as the special escalator used for MWDOC costs. Other escalation factors include account growth, and changes in per account demands from each customer class.

Water System Revenue Requirements

The majority of the community's potable water supply is imported through purchases from the City's wholesaler, MWDOC, which include the LTM System and WIP System. These amounts are essentially determined through the budgeting process of the outside agency and are included in the operating budget, as pass-through expenditures.

TABLE 2-3 WATER SYSTEM OPERATING REVENUES AND EXPENDITURES WITHOUT ADJUSTMENTS

CATEGORY	FYE 2018 (1)	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Total Operating Revenues	$17,074	$17,425	$17,425	$17,075	$17,075
Total Operating Expenditures	19,111	19,784	20,106	20,113	20,482
Cash Flow Surplus/(Deficit)	**$(2,037)**	**$(2,359)**	**$(2,681)**	**$(3,038)**	**$(3,407)**
Coverage	*1.79x*	1.52x	1.26x	0.96x	0.65x

Notes

1. All figures are in thousands of dollars and rounded.
2. The full table can be found in the Appendices.

The cash flow sufficiency test evaluates revenues received by the City to see that they are adequately covering both operating and non-operating expenses. Based on the results of the analysis shown in the previous table, without increasing revenues, the City is forecasted to maintain negative cash flows over the next five years. The City historically has funded its capital program through both rate revenue and cash reserves (which are funded over time with rate revenue) in order to minimize the rate impacts to its customers. The forecasted cash flow deficit is due to falling water sales and increasing expenditures. In addition, the City did not implement an eight percent (8%) increase contemplated under the prior rate study pending completion of this cost of service study. Table 2-3 illustrates how, in FYE 2018 through FYE 2022, the City's current rate revenue does not fully support operating expenditures, which creates a deficit.

Capital Improvement Plan

The City's CIP averages $4.1 million annually over the forecasted 5 year analysis period. While this represents significant investment in the system, this CIP scenario also defers some projects and investment in the system, with the goal of minimizing potential rate payer impact. Should revenues exceed the forecast, the City is expected to implement projects as originally planned. The following table details the potable water system's CIP.

TABLE 2-4 WATER SYSTEM CIP

FUNDING SOURCE	FYE 2018[1]	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Funded by Depreciation Reserves	$2,900	$2,375	$3,175	$4,825	$3,975
Funded by Acreage Reserve	400	650	40	180	200
Funded by Other Agency Revenue	500	250	100	506	500
Total Capital Funding/Expenditures	**$3,800**	**$3,275**	**$3,315**	**$5,511**	**$4,675**

Notes
1. All figures are in thousands of dollars and rounded.

Potable Water System Reserves

The appropriate amount of reserves are determined by factors such as the size of the operating budget, the amount of debt, the rate and billing structures, and risks related to environmental conditions. The City's current reserve policy sets the target level for the Operating Enterprise Funds at 12 percent of operating budget or approximately 45 days of cash, including depreciation funding for capital replacement and excluding water supply costs.[4] The following table details the Study's end of year balances for the potable water system.

TABLE 2-5 WATER SYSTEM END OF YEAR RESERVE BALANCES (WITH INCREASES)

FUNDING SOURCE	FYE 2018 [1]	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Operating Fund Balance	$(461)	$(242)	$1,429	$1,758	$1,811
Depreciation Fund Balance	2,193	2,488	2,062	2,304	3,933
Other Reserves[2]	1,600	1,250	900	900	900
Total Reserves	3,332	3,495	4,391	4,963	6,645
Reserve Target Minimum (Combined)	*$9,139*	*$9,222*	*$9,264*	*$9,265*	*$9,310*

Notes
1. All figures are in thousands of dollars and rounded.
2. Consists of restricted Conservation and Bond reserves.

After years of drawing down reserves to offset decreased water sales, existing (FY 2017) reserves are well below the set reserve minimums. At these levels, the City no longer has the ability to absorb losses and may be significantly hampered operationally in managing month-to-month expenditures. The proposed

[4] Established policies are presented in the Fiscal Policy section of the City's Annual Budget document.

increases are designed to rebuild reserves gradually over the five-year rate window to mitigate the immediate rate payer impact.

RECOMMENDED REVENUE REQUIREMENTS

In order to meet the City's projected capital needs, revenue increases are recommended over the next five years. This will enable the City to continue to fully fund its capital program and meet its debt service requirements. Furthermore, by initiating annual increases, the City can mitigate larger increases down the road, and avoid the need for substantial debt issuances. The following table details the revenue requirements with the proposed water rates that project loss or gain of revenue based on an implementation date of January 1, 2018. Future increases are forecasted to take effect January 1 (2019 – 2022).

TABLE 2-6 POTABLE WATER SYSTEM REVENUE REQUIREMENT – WITH ADJUSTMENTS

BUDGET ITEM	FYE 2018 [1]	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Total Operating Revenues	$15,457	$17,311	$18,869	$20,568	$21,185
Total Expenditures	19,111	19,784	20,106	20,113	20,482
Total Non-Operating Revenues/(Expenditures)	1,618	1,968	1,968	1,618	1,618
Recommended Revenue Increase	12.0%	9.0%	9.0%	3.0%	2.0%
Implementation Date	January 2018	January 2019	January 2020	January 2021	January 2022
Revenues from Increase	1,855	1,558	1,698	617	424
Less: Revenue Increase Delay	(927)	(779)	(849)	(309)	(212)
Revenues after Increase	$18,001	$20,058	$21,686	$22,494	$23,014
Resulting Cash Flows	**$(1,109)**	**$275**	**$1,581**	**$2,381**	**$2,533**
Coverage	2.82x	4.45x	5.99x	6.98x	7.25x

Notes

1. All figures are in thousands of dollars.

In order to bolster financial stability and adequately fund revenue requirements over the specified time frame, a rate structure is needed that fully funds operating and capital needs as well as rebuilds reserves over a shorter time frame despite volatile water demands.

3 Water Demand Analysis

POTABLE WATER DEMAND & SUPPLY

Water Demands

With the recent significant conservation, a full "bounce back" to historical averages is not anticipated. Instead long-lasting demand changes and continued water use efficiency will continue to effect water sales. Residential and commercial demands are expected to remain flat over the next five years. While some bounce-back may occur, continued conservation and water use efficiency efforts are expected to zero out any increase. One notable exception is Irrigation (Potable). These demands are expected to drop slightly as the City continues to expand its Recycled Water efforts. Therefore, aggregate demand is forecast to effectively flat line in this analysis. The following table shows the projected annual demands by customer classes. For this analysis FYE 2016 was used as the last full year of customer data.

TABLE 3-1 PROJECTED WATER DEMAND BY CUSTOMER CLASS (CCF)

CUSTOMER CLASS	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SFR: 0 - 7,000 ft² Lot	1,044,116	1,044,116	1,044,116	1,044,116	1,044,116
SFR: > 7,000 ft² Lot	683,475	683,475	683,475	683,475	683,475
Multifamily Residential: Mastered Meter	454,990	454,990	454,990	454,990	454,990
Multifamily Residential: Individual Meter	101,296	101,296	101,296	101,296	101,296
Commercial Potable	355,895	355,895	355,895	355,895	355,895
Irrigation Potable	390,660	379,440	368,220	368,220	368,220
Total Water Demand (CCF)	**3,030,432**	**3,019,212**	**3,007,992**	**3,007,992**	**3,007,992**

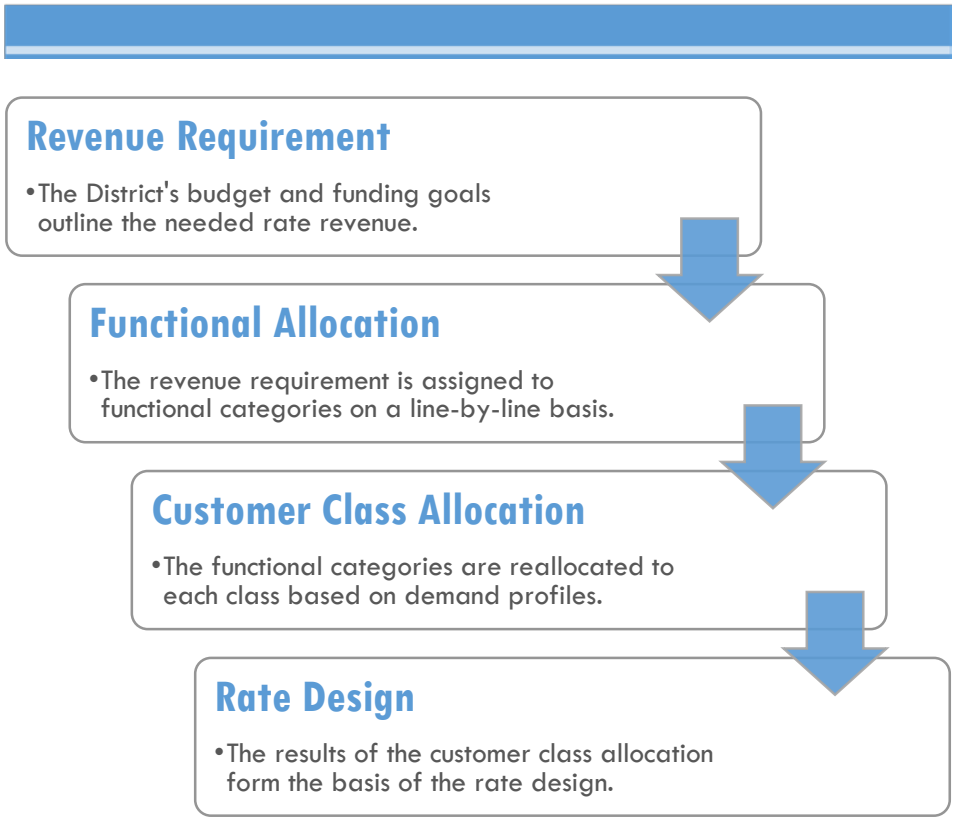
Forecasting Demand and Conservation

Like many agencies in California, the City experienced unprecedented conservation from its customers during 2016 due to state-mandated urban water demand reduction of 24 percent across the state with each agency receiving a specific conservation target based on current consumption rate (gallons per capita). In 2016, the City experienced a 26 percent decrease in usage compared to the 10-year average. This was 14 percent lower than the previous low set in 2010-11.

This rapid, significant conservation presents additional challenges to short-term demand planning. Under normal circumstances, past behavior can be a strong indicator of ongoing and future conservation and growth trends. However, paradigm shifts such as this one diminish the feasibility of forecasting from those past trends. Many customers have substantially changed how they use water, adopting adjustments such as turf removal and low-flow fixtures. These changes are unlikely to be completely reversed over the next several years. Assuming continued advances in conservation and efficiency, the assumption of potable water demand growth is net zero. Recycled water demand is expected to increase slightly as the City is looking at continuing recycled water usage.

4 Cost of Service Analysis

The purpose of a cost of service analysis is to provide a rational basis for distributing the full costs of the City's services to each customer class in proportion to the demands placed on the system. Carollo developed a detailed cost allocation that serves as the basis for the proposed rate adjustments. This analysis yields an appropriate method for allocating costs, which could be sustained unless substantial changes in cost drivers or customer consumption patterns occur.



The Cost of Service Analysis employs a tailored review of costs with a step-by-step approach. Taking the revenue requirement analysis outlined in the Report, the Functional Allocation designates each budget item to a specific City functional category, which is intended to translate each cost into a specific rate component. Those functional categories and their associated costs are allocated to the distinct customer classes based on each class' unique account, meter, and demand characteristics. A customer class consists of customers that commonly create or share responsibility for certain costs incurred by the utility, which is determined by looking at customer consumption data (including peak demand) to group similar groups of customers together. Carollo determined the City's current customer classes (SFR, MFR, Commercial, and Potable Irrigation) are appropriate based upon customer peaking and usage characteristics In the end the revenue requirement is allocated in a two-step process:

Allocated to several specific functional categories intended to provide structure to the rates → Allocated to each customer class based on a quantitative review of each classes' specific demand on the City's system

Following these steps, the revenue requirements for each customer class form a reasonable and equitable basis for developing rates. These two bulleted steps are presented in this section of the report.

FUNCTIONAL COST CATEGORIES AND FACTORS

Functional Cost Categories

The functional cost categories of the water system are as follows:

Customer

Customer costs are fixed expenditures that relate to operational support activities, including accounting, billing, customer service, and administrative and technical support. These expenditures are essentially common to all customers, regardless of meter size or volume of water used.

Capacity

Service costs are fixed expenditures that include meter and capacity related costs, such as meter maintenance and peaking charges, that are included based on the meter's hydraulic capacity or reserved capacity in the system.

Base Demand

Base costs support baseline demand for the City. These costs include baseline supplies, treatment, distribution, and storage, up to a level that meets the City's baseline demands throughout the year.

Peak Demand

Peak system demand can take several forms. The first and most basic is simply due to diurnal demand patterns—customers use more water early in the morning, and again in the evening. When this happens in aggregate across all customers, it generates a peak demand period on the system. Another form of peak occurs seasonally. Customers use more water in the hot, dry summer months than they do in the cooler, wetter winter months. This has been observed across virtually every agency's customer base.

In the functional cost allocation, peak costs primarily cover the cost of conservation and portions of the water system that were specifically identified as providing system peak.

Pass Through

Approximately 43 percent of the City's water costs are expenditures incurred from importing water. These costs are separately identified and outside the control of the City's budget process. For this reason, any future cost increases are passed through directly to the customers.

Functional Allocation Factors

The allocation factors used in the Functional Allocation are outlined in the following table. In the Functional Allocation, each line item in the City's budget is classified according to each of these functions listed. The budgeted value for that line item is then allocated based on the percentages associated with the allocation classification.

TABLE 4-1 ALLOCATION FACTORS

ALLOCATION BASIS	PURPOSE	CUSTOMER	CAPACITY	BASE	PEAK	PASS-THROUGH
Customer Only	Customer Costs are common to all accounts and include the costs of billing, customer accounting, general and administrative costs, and other related costs.	100%				
Capacity Only	Capacity costs are incurred to establish or maintain additional system capacity and the ability to maintain daily service to all customers. A portion goes to peak because increased peak demand necessitates additional capacity reservation, and ultimately, creation.		100%			
Base Only	Base costs cover a baseline level of water service, which excludes peak demands, whether seasonal or diurnal.			100%		
Peak Only	Peak costs cover the highest marginal cost operations that the City sees to meet peak summer and day demands.				100%	
Fixed	General mix of customer and capacity related costs to be recovered purely through a fixed revenue stream.	100%				
Capacity/Peaking	Costs related to peaking (capacity and demand).		50%	43%	7%	
Conservation	Costs allocated to accounts (general benefit) and Peak (targeted use).				100%	
Purchased Water	Purchased water cost to be decoupled and recovered through the pass-through component.					100%
As All Others	As all others reallocates designated costs in accordance with the preliminary cost allocation results.	17%	44%	38%		

FUNCTIONAL ALLOCATION RESULTS

The following tables show the results of the functional cost allocation analysis based on the five-year average of the forecasted expenses for FYE 2018 through FYE 2022. These results are calculated by taking a sum of costs allocated to each category in Table 4-1, and determining what percentage of total costs is comprised of each category. The five-year average was used because relying on a single year's budget could lead to the functional allocation being abnormally impacted by a one-time expenditure or operation. By using an average of several years of budgets, this analysis yields an appropriate method for allocating costs that could be sustained into the future assuming that there are no substantial changes in cost drivers or customer consumption patterns. The table also compares the results of this analysis with the cost recovery for FYE 2016 in.

TABLE 4-2 POTABLE WATER FUNCTIONAL COST ALLOCATION

CATEGORY	ESTIMATED CURRENT COST RECOVERY	PROPOSED COST OF SERVICE RESULTS	RATE COMPONENT
Water - Fixed Rate Categories			
Customer	9%	9%	**Fixed Charge**– monthly service charge for all customers (water and sewer), regardless of demand. **Customer Component**– fixed costs associated with managing a customer account (i.e., meter reading). **Capacity Component**– fixed costs associated with serving a large meter (i.e., some distribution costs)
Capacity	19%	23%	
Water - Commodity Rate Categories			
Base	24%	19%	**Commodity Charge**– recovered on all units of water based on base, peak, or pass-through costs.
Peak	5%	6%	
Pass-through	43%	43%	

TABLE 4-3 POTABLE WATER SYSTEM FUNCTION ALLOCATION RESULTS

FUNCTIONAL CATEGORY	FYE 2018 (1)	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Customer	$1,459	$1,705	$1,974	$2,070	$2,136
Capacity	3,342	3,906	4,522	4,742	4,894
Base	3,707	4,333	5,017	5,261	5,429
Peak	851	995	1,152	1,208	1,247
Pass-through	7,952	7,930	7,902	7,902	7,902
Total	**$17,311**	**$18,869**	**$20,568**	**$21,185**	**$21,608**

Notes

1. Values shown in thousand dollars.

MULTI-YEAR CUSTOMER CLASS ALLOCATION

Base Water Cost Allocation

Base water costs support baseline demand for the City as indicated by the following table. These costs include baseline supplies, treatment, distribution, and storage, up to a level that meets the City's baseline demands throughout the year.

TABLE 4-4 BASE WATER COST ALLOCATION

CUSTOMER CLASS	ALLOCATION BASIS (% OF USAGE)	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SFR: 0 - 7,000 ft² Lot	34%	$1,277	$1,493	$1,729	$1,813	$1,871
SFR: > 7,000 ft² Lot	23%	836	977	1,132	1,187	1,224
Multifamily Residential: Master Meter	15%	557	651	753	790	815
Multifamily Residential: Individual Meter	3%	124	145	168	176	181
Commercial Potable	12%	435	509	589	618	638
Irrigation Potable	13%	478	559	647	678	700
Total	**100%**	**$3,707**	**$4,333**	**$5,017**	**$5,261**	**$5,429**

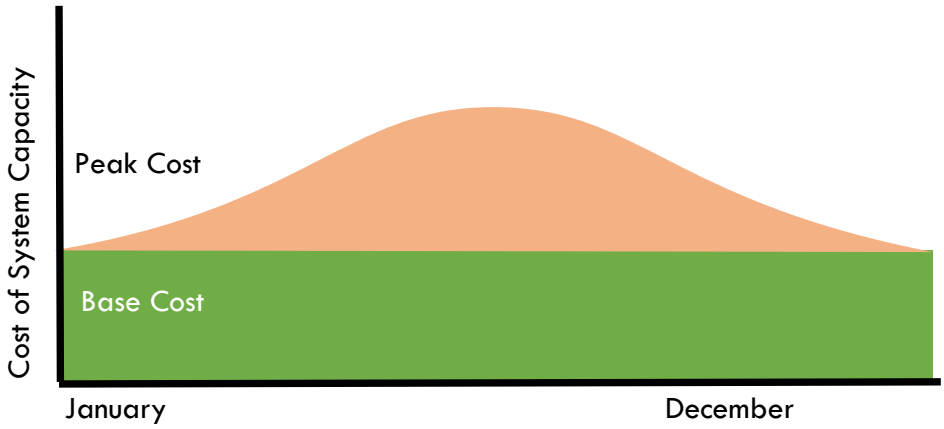
Notes

1. Values shown in thousand dollars.

Peak Water Cost Allocation

Peak system demand can take several forms from diurnal demand patterns of usage patterns throughout the day to seasonally where customers use more water in the hot, dry summer months than they do in winter months.

FIGURE 4-1 SYSTEM CAPACITY COSTS



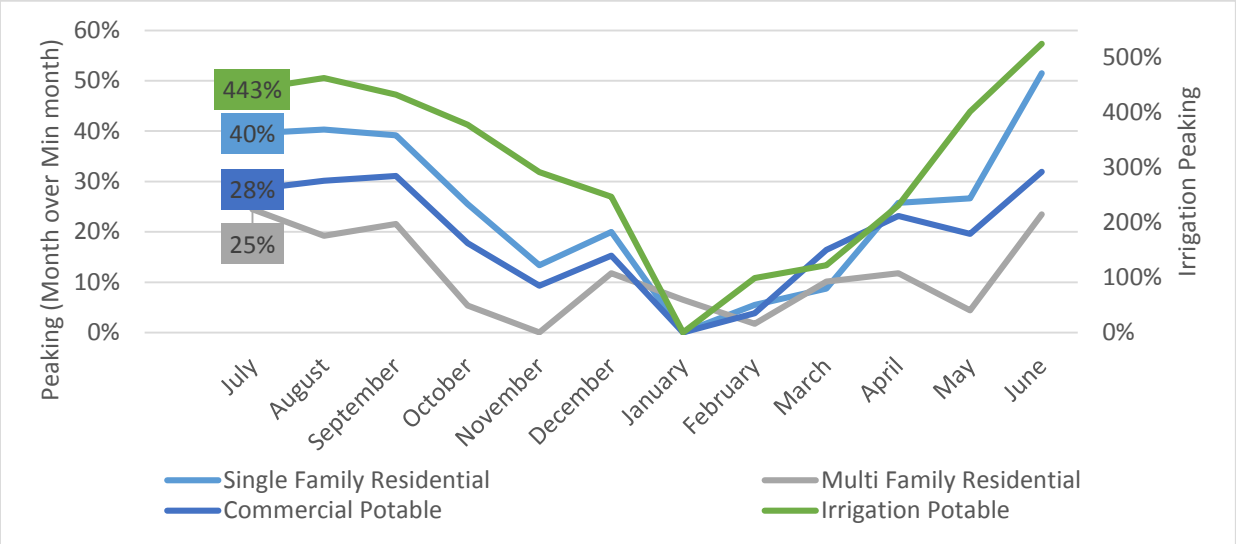
Peak costs primarily cover the incrementally greater production costs for the City to meet this higher demand. Because the water system must be designed to handle this peaking load, peaking requirements effect a number of facets of infrastructure including sizing of storage and overall system distribution capacity. As such, agency's infrastructure is designed and built according to peak demands.

According to the 2005 Water Master Plan the system was sized for a maximum day demand which is 1.8 times the average day demand. Operational storage in the reservoirs was designed for 35 percent of maximum day demand plus fire flows. Carollo had the City Staff review assets and identify which facilities were designed around peak versus base demands. Based on this analysis, peaking assets represented roughly 36 percent or nearly $1.26 million of annual depreciation. This peaking cost was then allocated half to capacity (fixed charge) and half to peak (to be recovered in the variable rate). The result of this allocation allows rates to mirror the expenses associated with facilities and infrastructure to the City's Peak Design Criteria.

Customer Class Peak Profiles

Each customer class served by the City demonstrates a unique annual peak profile. The annual peak profile is depicted as the ratio of each month to the lowest demand month of the year. Figure 4-2 outlines the FYE 2016 peak profile for the City. SFR, MFR, and Commercial Potable classes had peak profiles of 40, 25, and 28 percent, respectively. This is expected, given that SFR tends to have consistent seasonal landscaping needs, whereas commercial often has fewer landscaping needs and MFR has the least landscaping needs. Conversely, Irrigation Potable has a significant peak factor of 443 percent.

FIGURE 4-2 WATER SYSTEM CUSTOMER PEAKING PROFILES



These peak profiles are useful for allocating defined peak costs appropriately. While each customer class has access to the same system, each customer classes' use of that system (not just volume) plays a critical role in how costs are incurred. As discussed previously, the City must build its system for peak, not average, demand. As much of that capacity is underutilized due to a seasonal peak curve, this methodology allocates peak costs to the users driving the need for extra capacity. Table 4-5 details each customer share of peak costs and the corresponding annual allocation.

TABLE 4-5 PEAK WATER COST ALLOCATION

CUSTOMER CLASS	ALLOCATION BASIS (% OF PEAK)	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
SFR: 0 - 7,000 ft² Lot	28%	$242	$283	$328	$344	$355
SFR: > 7,000 ft² Lot	24%	202	236	273	286	295
Multifamily Residential: Mastered Meter	7%	59	69	80	84	87
Multifamily Residential: Individual Meter	1%	8	9	11	11	12
Commercial Potable	6%	49	57	66	69	72
Irrigation Potable	34%	291	340	394	413	427
Total	100%	$851	$995	$1,152	$1,208	$1,247

Notes

1. Values shown in thousand dollars and rounded.

5 Rate Design Analysis

The rate design analysis links the customer class costs with the water rates necessary to achieve cost recovery. The focus of this process is to achieve full cost recovery and substantiate that each customer class is paying their fair and proportionate share of system costs.

EXISTING RATE STRUCTURE

The City establishes rates and charges necessary to maintain its high-quality service. Based on the most recent cost of service study (2013), the rates have historically been designed to reflect a fairness principle, consistent with Proposition 218 that all customers pay for the cost of providing safe and reliable water and wastewater services. The City maintains separate rate structures for water, recycled water, and sewer customers.

Water Rates

The existing water rate structure includes two rate components:

- Fixed Service Charge, assessed on a per meter equivalent basis.
- Variable rate (commodity rate) per hundred cubic feet (CCF) of water sold and billed monthly.

Depending on the customer class, the variable rate can be assessed in an inclining tiered rate structure or a uniform rate. The following sections summarize the specific rates, charges, and classes.

Fixed Charges

The logic used to calculate the water service charges is based on a recovery of costs by "equivalent meter size." The current equivalent meter capacity factors are shown in the following table. These factors were calculated by the City considering the inside area of the water meter/pipeline as the basis for assigning costs. The meters up to 1-inch were assigned a factor of 1.0. The other meter sizes were calculated as a ratio of that meter's inside area to the 1-inch meters' inside area. The following table outlines the existing service charges.

TABLE 5-1 EXISTING WATER FIXED SERVICE CHARGE BY METER SIZE

METER SIZE	METER EQUIVALENT CAPACITY FACTOR	WATER SERVICE CHARGE
1"	1.00	$17.48
1-1/2"	1.00	39.31
2"	3.33	58.73
3"	5.33	114.16
4"	11.67	172.45
6"	21.00	330.91

Notes

1. Rates have been rounded up to the nearest $0.01.

All water customers are charged fixed service charges based on the service meter size. These fixed service charges are driven by costs independent of consumption. In general, the fixed service charge funds system replacement costs, service and main line maintenance, and administrative expenses.

Commodity Rates

The existing commodity rate varies by customer class. All customers except for Commercial and Non-Potable Irrigation are on a three-tier inclining rate structure for the commodity (variable) portion of their bill. Dedicated (potable) irrigation meters are billed on an inclining budget based structure, while Commercial and Non-Potable Irrigation customers are billed on a uniform rate basis. Unlike tiered rates which increase with higher levels of consumption, a uniform rate charges only one rate per unit of water consumed, regardless of total consumption. Each tier is determined seasonally (winter and summer) based historical weather patterns and evaporation levels (ETo). The following tables detail the current rates, charges, and classes.

TABLE 5-2 EXISTING WATER RATE SUMMARY– FYE 2017

CUSTOMER CLASS	TIER	CURRENT RATE [1]	WINTER ALLOCATION IN UNITS	SUMMER ALLOCATION IN UNITS
SFR: 0 - 7,000 ft² Lot	1	$2.86	0 - 9	0 - 9
	2	4.68	10 - 14	10 - 19
	3	10.06	over 15	over 20
SFR: > 7,000 ft² Lot	1	$2.86	0 - 9	0 - 9
	2	4.68	10 - 19	10 - 28
	3	10.06	over 20	over 29
MFR: Individually Metered	1	$2.86	0 - 6	0 - 6
	2	4.68	7 - 9	7 - 11
	3	10.06	over 10	over 12
MFR: Master Metered	1	$2.86	0 - 6	0 - 6
	2	4.68	7 - 9	7 - 10
	3	10.06	over 10	over 11
Commercial	Uniform	$4.00	N/A	N/A
Potable Irrigation [2]	1	$2.86	0 - .0463	0 - .0918
	2	4.68	.0464 - .1853	.0919 - .3673
	3	10.06	over .1853	over .3673
Non-Potable Irrigation	Uniform	$2.38	N/A	N/A

Notes

1. Current rate per billing unit. 1 billing unit = one-hundred cubic feet = 748 gallons.
2. Irrigation is based upon the quantity of water consumed per one 100 square feet of irrigated land.

RATE STRUCTURE DESIGN

The City has flexibility in designing a rate structure that meets its policy and fiscal goals. In determining the appropriate rates and rate structure, Carollo analyzed various rate design alternatives and considered the impacts to both the City and its customers. Carollo utilized multiple criteria to judge each rate structure's ability to achieve desired objectives. These objectives are outlined on the following page:

Given the numerous and, at times, competing elements of rate design, selection of an appropriate rate structure is complex. There is no single structure that meets all objectives equally. Furthermore, not all objectives are valued equally by all agencies. Each objective has merit and plays an important role when implementing changes and evaluating the overall effectiveness of proposed changes. These elements and competing objectives were discussed and evaluated at length throughout the financial and rate study process.

The recommended rate schedules are designed to recover the revenue requirement in a way that collects a proportionate share of costs from each class. The proposed rate structure refines the City's existing structures to incorporate Staff, Council, and public input, changes in customer demands, and recent regulatory and legal frameworks. The details behind each of the rate recommendations, including any new components or structural changes, are outlined within this report.

Various financial scenarios have been developed to balance financial stability and customer impacts. To set a clear path towards aligning costs, increasing reserves, and managing decreased water sales, Carollo recommends an annual rate increase from FYE 2018 to FYE 2022 by 12%, 9%, 9%, 3%, and 2% respectively as calculated in Table 2-6. This section outlines the proposed water rates and charges for the water enterprise to achieve financial stability.

WATER FIXED SERVICE CHARGES

The City currently collects fixed revenue from a monthly service charge. This analysis reviewed methods to increase the City's fixed revenue recovery. The City's goal is to increase revenue stability, while still promoting conservation for all customers through a variable rate. This analysis recommends that City

continue to use a fixed monthly service charge, and combine it with a secondary demand charge that is uniform, but reflects the peak behavior of each customer class.

Service Charge Calculation

The service charge varies by meter size as it more reasonably reflects the increased cost to provide service and capacity. For FYE 2018, 7,526 accounts and 23,664 MEUs were projected. Each meter is scaled by a defined safe maximum operating capacity standard flow rate (in gpm). Larger meters have higher serviceable flow rates. These flow rates provide a reasonable nexus as to the impact a larger meter places on the system relative to a standard 1-inch meter (1 MEU). The following table provides the ratio used to scale MEUs specifically for the City, based on meter capacities defined by AWWA standards.

TABLE 5-3 FYE 2018 METER RATIOS AND MEU CALCULATION

METER SIZE	AWWA CAPACITY RATIO	UPDATED MEU RATIO (1)
3/4" & 1" (2)	30	1.00
1.5"	100	3.33
2"	160	5.3 3
3"	350	11.67
4"	630	21.00
6"	1,300	43.33

Notes

1. Ratios to reflect current AWWA safe maximum operating capacity standards – gpm (Turbine Type Class I)
2. The default meter size is 1" and has been upsized from 3/4" to reflect fire flow requirements. Meter ratio based on 3/4" flow rate.

The following table calculates the total monthly service charge of $18.71 for a 1-inch meter.

TABLE 5-4 PROPOSED ANNUAL SERVICE CHARGE CALCULATION

CALCULATION STEP	SERVICE CHARGE	SERVICE CHARGE	TOTAL SERVICE CHARGE
Revenue Requirement **(A)** (1)	$1,458,726	$3,341,731	
Units of Service **(B)**	17,526 Accounts	23,664 MEUs (2)	
Monthly Service Charge **(C)** (3) **(C) = (A) ÷ (B) ÷ 12**	$6.94 per Account per Month	$11.77 per MEU per Month	
Total Service Charge **(D)** **(D)** = Sum of **(C)**	$6.94	$11.77	$18.71 per month

Notes

1. Values shown in thousand dollars.
2. Meter equivalent units, based on meter ratios.
3. Rates have been rounded up to the nearest $0.01.

The proposed capacity rates for the next five years are outlined in the following table. These rates apply to all water customers. These following table repeats the calculation found for each year of the Study, by taking the annual revenue requirement and dividing it by the projected meter equivalent.

TABLE 5-5 PROPOSED WATER MONTHLY SERVICE CHARGE – FYE 2018

		PROPOSED RATE [1]				
CHARGE	METER [2]	FYE 2018	FYE 2019	FYE 220	FYE 2021	FYE 2022
Monthly Service by Meter Size	3/4" & 1"	$18.71	21.87	25.33	26.56	27.41
	1-1/2"	46.17	53.97	62.49	65.53	67.62
	2"	69.70	81.47	94.34	98.93	102.09
	3"	144.23	168.59	195.19	204.70	211.23
	4"	254.07	296.96	343.83	360.58	372.08
	6"	516.89	604.14	699.48	733.56	756.96

Notes

1. Current rate per billing unit. 1 billing unit = one-hundred cubic feet = 748 gallons.
2. Rates have been rounded up to the nearest $0.01.

The updated MEU ratios are based on the hydraulic capacity of each meter size. Potential customer demand is assumed to be proportional to meter size, and as such is appropriate in the design of the service charge portion of the water fee schedule when such charges include fixed-capacity related or readiness-to-serve related costs.

WATER VARIABLE RATES

Variable Rate Structure Changes

Under the City's current rate structure, Commercial and Non-potable Irrigation customers are billed based on a uniform rate structure, while all other customer classes (SFR, MFR, and Irrigation) are billed based on a seasonal, three-tier rate. Based on changes to water demands and the City's desire to simplify the rate structure, this analysis recommends that only SFR customers transition to either a two-tier or uniform rate going forward, and that all remaining classes transition to or remain with individual uniform rates.

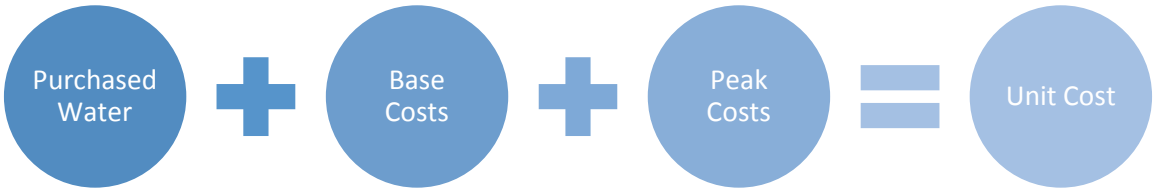
Uniform rates are ideally suited for classes that are heterogeneous or highly varied as it is difficult to identify a tier allotment that works for such a diverse set of needs. Under the uniform rate, each class would have a blended cost of water that varies based on the class' unique peak. Uniform rates further simplify the rate structure by allocation peaking and conservation costs to all users, rather than only higher users.

As SFR customers are relatively homogeneous (when compared to the diversity of commercial users) a two-tiered approach is also a potential. The genesis of the two tiers is based on a detailed consumption and tier analysis. The analysis revealed that existing conservation levels have rendered the need for a three-tier rate structure unnecessary especially when coupled with the City's desire to simplify the rate structure and reduce revenue vulnerability. The proposed two-tier structure also eliminates the need for seasonal or large lot-based rates as tier 1 is designed to reflect baseline demands. Tier 2 (above 9 CCF) reflects the

City's need to further adapt conservation objectives and apportioning the increased expense of servicing peak demand.

Rate Design Philosophy

Stemming from the functional allocation, the proposed rates are comprised of three distinct components. Each component is a layer of costs that reflects the specific use of the system. Each component is separately calculated and identified below. The three components are:



Water Purchase Costs – Pass-Through Costs[5]

The Purchased Water component is designed for the recovery of purchased water costs. Every unit of water sold incurs the same cost to purchase a unit from MWDOC, regardless of total usage or customer class. In order to recover this costs, each year, based on a rate provided by the MWDOC, the City will calculate total water costs and total assumed demands.

As of FY 2017, the City incurs four water supply costs on a fixed basis – (1) MWD Readiness to Serve Charge (RTS), (2) MWD Capacity Charge, (3) MWDOC Retail Meter Charge, and (4) EOC Feeder #2. The City also incurs two variable charges based on acre feet purchased – (1) MWDOC Blended Water and (2) SCP O&M Surcharge. The water supply fixed costs of $0.82M, while the variable costs of $7.29M make up the majority of the costs. With the total forecasted demand (AF), the unit cost for the rate is calculated to be $2.68 per CCF and is added to each class' calculated rate.

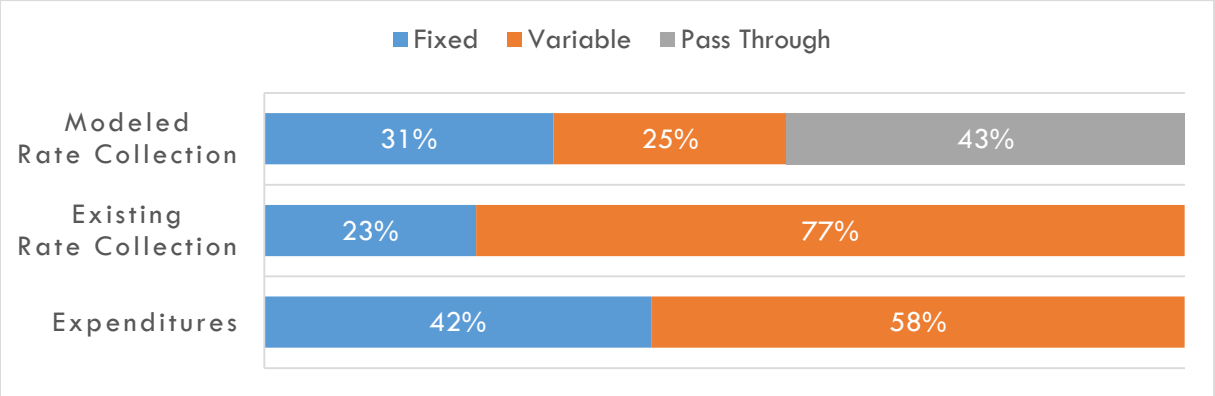
$$Pass-Through = \frac{Total\ Water\ Cost}{Forecasted\ Demand} = \frac{\$8.10\ M}{6{,}957\ AF} = \frac{\$1{,}164}{AF} = \$2.68\ per\ ccf$$

While the current unit cost for water is $2.68, these costs are outside the control of the City. In general, MWD or MWDOC implement rate increases effective January 1, however, they can raise rates as necessary (with proper noticing). As the cost is outside the City's control, the City is able to pass-through the purchased water costs directly to its rate payers. By decoupling these future cost increases from the City's typical rate-setting process, the City will be able to enhance transparency, cost recovery, and maintain more accurate rates. If the rates are not decoupled, the City would have to make assumptions of these potential increases over the next five years, leaving the City vulnerable to MWDOC rate increases and rate scrutiny. Pass-through rates can be decoupled and implemented through provision in accordance with AB 3030 (Government Code § 53756).

It is important to note that while the specific components are outlined above, should the City incur additional sources of supply or additional water rate components (from an outside agency), these costs can be added/substituted.

[5] Since the Draft Report, the Pass Through has been updated to reflect CY 2018 water supply costs, where the previous version reflected FY 2017/18 costs. This change reflected $0.05 increase to the Pass Through Rate.

FIGURE 5-1 WATER SYSTEM EXPENDITURES VS RATE COLLECTION



The above figure illustrates Carollo's recommendation of 43 percent recovery of expenditures by pass-through costs. By defining the rate and collecting it on a one-for-one basis, this would reduce the City's variable liability from 77 percent to only 25 percent (when combined with the proposed increase to fixed cost recovery). With a proposed rate structure change on January 1, 2018, this will put the City on the path to reduced revenue vulnerability. With an inclusive, but decoupled pass-through charge the new proposed rates are designed to automatically recover costs even as the costs of purchased water increases.

Prior to each pass through increase, the City will calculate the proposed rate and notice (typically through a form of bill insert or comment on the bill itself) customers of the pending adjustment. It is expected that the pass-through will be calculated for January 1 implementation to correspond with typical increases from the City's water suppliers. Prior to January 1 of each calendar year the City will calculate the pass-through to reflect upcoming January 1 increases from its water suppliers.

Single Family Residential

SFR Base Costs

Every unit of water sold, regardless of tier, is built upon the base cost unit price. Using the cost allocation from the Multi-Year Customer Class Allocation section, the base unit cost is outlined in the following table.

TABLE 5-6 SFR BASE UNIT COST CALCULATION

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Base Costs [1]	$2,114	$2,470	$2,860	$2,999	$3,095
Projected Demand (CCF)	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591
Base Component ($/CCF) [2]	$1.23	$1.43	$1.66	$1.74	$1.80

Notes
1. Values shown in thousand dollars and rounded.
2. Rates have been rounded up to the nearest $0.01.

SFR Peak Costs

In addition to the base unit cost, some units of usage will incur a peak cost component. The peak rate is designed to recover the defined cost of peaking and conservation. The FYE 2018 calculation for peak charges is shown in the following table. For the two-tier SFR option, Tier 1 usage is considered baseline and the infrastructure and services allocated to peak costs are allocated to Tier 2 only. The following calculation details the cost calculation defining the incremental peaking cost.

TABLE 5-7 PROPOSED FYE 2018 SFR PEAK UNIT COST CALCULATION

FORMULA COMPONENT	INCREMENTAL PEAK COST
Total Peak Revenue Requirement [1] **(A)**	$443,752
Projected Peak Demand (CCF) **(B)**	518,277
Peak Unit Cost **(A ÷ B)** [2]	$0.86/ CCF

Notes
1. Values shown in thousand dollars and rounded.
2. Rates have been rounded up to the nearest $0.01.

The five-year forecasted peak component is shown in the following table. This amount is added to the Base rate to define the cost of Tier 2.

TABLE 5-8 PROPOSED SFR PEAK COMPONENT TIER 2 ONLY

TIER	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Peak Component ($/CCF) [1]	$0.86	$1.01	$1.16	$1.22	$1.26

Note
1. Rates have been rounded up to the nearest $0.01.

SFR Tiered Rate Calculation

With the applicable peak and base components calculated, the proposed rate is the addition of these two components plus the MWDOC rate calculated previously in this section. This forms the per unit variable rate at each tier for SFR customers, and these rates are summarized in the following table.

TABLE 5-9 PROPOSED SFR TIERED RATES

TIER	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Base Cost (A)	$1.23	$1.43	$1.66	$1.74	$1.80
Peak Cost (B)	0.86	1.01	1.16	1.22	1.26
MWDOC Pass-Through (C) [1]	2.68	2.68	2.68	2.68	2.68
Tier 1 (A + C)	$3.91	$4.11	$4.34	$4.42	$4.48
Tier 2 (A + B + C)	$4.77	$5.12	$5.50	$5.64	$5.74

Notes

1. Rate will be adjusted separately as a Pass-Through based on rate increases from the City's wholesale water provider MWDOC.

SFR Uniform Rate Calculation

Alternative to the two-tiered approach, the City could implement a uniform rate for SFR as well. Under this approach the total base and peak costs would be divided in their entirety by SFR demands. The resulting rate is in the middle of the proposed two-tier rates.

TABLE 5-10 PROPOSED SFR UNIFORM RATES

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Base Costs	$2,114	$2,470	$2,860	$2,999	$3,095
Peak Costs	$444	$519	$601	$630	$650
Total Costs	**$2,557**	**$2,989**	**$3,461**	**$3,629**	**$3,745**
Projected Demand (CCF)	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591
Base & Peak ($/CCF)	$1.49	$1.74	$2.01	$2.11	$2.17
MWDOC Pass-Through [1]	2.68	2.68	2.68	2.68	2.68
SFR Uniform Rate	**$4.17**	**$4.42**	**$4.69**	**$4.79**	**$4.85**

Notes

1. Rate will be adjusted separately as a Pass-Through based on rate increases from the City's wholesale water provider, MWDOC.

While both rate structures meet the City's desired objectives of customer equity and simplification, and compliance with Proposition 218 and industry standards, Carollo recommends the uniform rate optionas this option appears to best meet the City's objectives of simplifying the rate structure and providing greater revenue stability while proportionally the City's costs of service among its customers.

Uniform Rate Calculation by Class

Base Cost Component

Like the SFR rates, every unit of water sold is built initially on a base unit cost. Because this cost was allocated based on usage, it is the same for all customer classes (in Year 1). These costs for the remaining classes are outlined in the following table.

TABLE 5-11 UNIFORM RATE BASE UNIT COST CALCULATION

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
MFR Base Costs	$681	$795	$921	$966	$997
Commercial Base Costs	435	509	589	618	638
Potable Irrigation Base Costs	478	559	647	678	700
Total Base Costs (1)	**$1,594**	**$1,863**	**$2,157**	**$2,262**	**$2,334**
MFR Demand (CCF)	556,286	556,286	556,286	556,286	556,286
Commercial Demand (CCF)	355,895	355,895	355,895	355,895	355,895
Potable Irrigation Demand (CCF)	390,660	379,440	368,220	368,220	368,220
Projected Demand (CCF) (2)	**1,302,841**	**1,291,621**	**1,280,401**	**1,280,401**	**1,280,401**
MFR Base Component ($/CCF) (3)	$1.23	$1.43	$1.66	$1.74	$1.80
Commercial Base Component ($/CCF)	1.23	1.43	1.66	1.74	1.80
Potable Irrigation Component ($/CCF)	1.23	1.48	1.76	1.85	1.91

Notes
1. Values are shown in thousand dollars and rounded.
2. Decreasing potable irrigation demand reflects conversions from irrigation to recycled water.
3. Component rates have been rounded up to the nearest $0.01.

Peak Rate Component

The uniform rates are the combination of the base rate calculating above and the peak rate component for each customer class. The peak rate component is calculated using the allocations and the projected demands for each class.

TABLE 5-12 MFR PEAK COMPONENT CALCULATION

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Allocated Peak Costs (1)	$67.3	$78.7	$91.1	$95.6	$98.6
Projected Demand (CCF)	556,286	556,286	556,286	556,286	556,286
MFR Peak Component ($/CCF) (2)	$0.13	$0.15	$0.17	$0.18	$0.18

Notes
1. Values shown in thousand dollars and rounded.
2. Rounded up to the nearest $0.01.

TABLE 5-13 COMMERCIAL PEAK COMPONENT CALCULATION

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Allocated Peak Costs [1]	$48.9	$57.1	$66.2	$69.4	$72.6
Projected Demand (CCF)	355,895	355,895	355,895	355,895	355,895
Commercial Peak Component ($/CCF) [2]	$0.14	$0.17	$0.19	$0.20	$0.21

Notes
1. Values shown in thousand dollars.
2. Rounded up to the nearest $0.01.

TABLE 5-14 POTABLE IRRIGATION PEAK COMPONENT CALCULATION

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Allocated Peak Costs [1]	$291.3	$340.5	$394.2	$413.4	$426.6
Projected Demand (CCF) [2]	390,660	379,440	368,220	368,220	368,220
Potable Irrigation Peak Component ($/CCF) [3]	$0.75	$0.90	$1.08	$1.13	$1.16

Notes
1. Values shown in thousand dollars.
2. Decreasing potable irrigation demand reflects conversions from irrigation to recycled water.
3. Rounded up to the nearest $0.01.

With the applicable peak and base components calculated for each customer class, the proposed uniform rate is the addition of these two components plus the MWDOC rate calculated previously in this section. This forms the per-unit variable rate for each customer class, and these rates are summarized in the following table.

TABLE 5-15 PROPOSED UNIFORM WATER RATES ($/CCF)

		PROPOSED RATE [1]				
CUSTOMER CLASS	TIER	FYE 2018 [2]	FYE 2019	FYE 220	FYE 2021	FYE 2022
MFR	Uniform	$4.04	$4.26	$4.51	$4.60	$4.66
Commercial Potable	Uniform	$4.05	$4.28	$4.53	$4.62	$4.69
Irrigation Potable	Uniform	$4.66	$5.06	$5.52	$5.66	$5.75

Notes
1. Sum of Base Component, Peak Component, and Water Pass-Through Component.
2. Rates have been rounded up to the nearest $0.01.

RATE RECOMMENDATION

Other rate alternatives such as only uniform rates, seasonal rates, and water budget rates were reviewed to encompass a variety of available alternatives to achieve key objectives. Carollo recommends uniform rates (by class) to bolster fiscal stability, more appropriately reflect the current demand levels, and enhance customer understanding and ease of implementation. The following changes to the rate structure are summarized as the following:

- Elimination of seasonal tier adjustments and lot designations
- Combining SFR into one residential customer class
- Following a September 5th (2017) Council Recommendation, selection of either a uniform rate for SFR and remaining classes (including potable irrigation)
- Fixed charge is increased and phased in over three years in order to gradually increase fixed cost recovery and reduce the City's vulnerability to decreased sales
- Decoupling pass-through purchased water costs limit potential cost recovery risk
- Demand Management Rates (similar to a drought surcharge) provide greater cost recovery flexibility under future demand reductions/conservation conditions

TABLE 5-16 VARIABLE RATE SUMMARY

			PROPOSED RATE [1]				
CUSTOMER CLASS	TIER	UNITS	FYE 2018 [2]	FYE 2019	FYE 220	FYE 2021	FYE 2022
SFR	Tier 1	0 - 9	$3.91	$4.11	$4.34	$4.42	$4.48
	Tier 2	10 +	$4.77	$5.12	$5.50	$5.64	$5.74
SFR*	Uniform	N/A	$4.17	$4.42	$4.69	$4.79	$4.85
MFR*	Uniform	N/A	$4.04	$4.26	$4.51	$4.60	$4.66
Commercial- Potable*	Uniform	N/A	$4.05	$4.28	$4.53	$4.62	$4.69
Irrigation – Potable*	Uniform	N/A	$4.66	$5.06	$5.52	$5.66	$5.75

Notes

1. Current rate per billing unit. 1 billing unit = one-hundred cubic feet = 748 gallons.
2. Rates have been rounded up to the nearest $0.01.

* Reflects staff and consultant recommendations that were confirmed at the September 5th (2017) Council presentation

In the proposed rates, the difference between uniform rates and tiered rates is the collection of water conservation costs since uniform rates blend conservation costs (peak) across all customers. Some conservation costs are recovered in the customer fixed charge to reflect general conservation efforts. For SFR customers, tiered rates decouple base- and peak-related costs and recover conservation costs only from Tier 2. The proposed Tier 1 breakpoint is 9 CCF, which reflects the City's typical winter usage and roughly 75 percent of accounts in winter and 50 percent of accounts in summer. Usage above this level is provided at a higher level of service, reflective of targeted conservation programs and greater use of peak infrastructure.

Demand Management Rates

Demand rates are surcharges that can be implemented in time of need to safeguard cost recovery. At the discretion of the City Council, the City may introduce demand rates in concert with the existing rate schedule during necessary usage reductions. As outlined throughout the report, decreased demand can undermine the reliability of rate revenue, leaving the agency to find cost savings, absorb the decreased cash flow, or further increase rates.

Demand rates can be defined as a fixed component, variable rate surcharge, or a combination of both. If baseline demands are not realized, decreasing demands drive need for additional rate increases in the short-term. The City's current rate structure recovers 77 percent of annual expenditures through variable rates.

When calculating demand management rates, the adjusted demand scenario determines both the reduced revenue and any cost savings due to reduced operational needs. This analysis reviewed three demand stages— up to 10 percent, up to 20, and greater than 20 percent—from projected FYE 2018 demands. These demand stages are presented as ranges as drops in demand cannot be easily targeted and can be volatile from month to month. The City (staff and Council) will have the ability to implement these rates when necessary to provide sufficient revenues under various drought, water shortage, or demand reduction periods. The rates can either be implemented proactively (known shortage or drought) or reactively (wait and see if reductions are prolonged). The projected demand revenue requirements and proposed rate are shown for all classes in the following table.

TABLE 5-17 DEMAND MANAGEMENT RATE

	UP TO A 10% REDUCTION	UP TO A 20% REDUCTION	GREATER THAN A 20%+ REDUCTION
DEMAND IMPACT			
Revenue Impact	$(1,063)	$(2,079)	$(3,113)
Avoided Cost (purchased water)	654	1,276	1,925
Total Additional Revenue Needed (1)	**$(409)**	**$(803)**	**$(1,188)**
FIXED COMPONENT			
Fixed Revenue to be Recovered	$0	$209	$209
Meter Equivalents (ME)	23,664	23,664	23,664
Fixed Rate ($/meter equivalent) (2)	$0.00	$0.74	$0.74
VARIABLE COMPONENT			
Variable Revenue to be Recovered	$409	$594	$979
Projected Demand (CCF)	2,225,004	1,987,955	1,740,540
Variable Rate ($/CCF)	$0.19	$0.30	$0.57

Notes

1. Values shown in thousands and rounded.
2. Rates have been rounded up to the nearest $0.01.

The demand management rate adjustments are split between fixed and variable revenue sources. Under the first demand reduction stage (<10 percent), all deficient revenue is allocated to the variable rate. For stages two and three (<20 and 20+ percent, respectively), a fixed charge component (per meter equivalent) is added. All remaining costs after allocating to the fixed surcharge are collected from the commodity rates. The rates are calculated on a uniform unit cost basis and do not differ for tiers or customer classes. The surcharge is added on to each unit cost of water in the Commodity Rate.

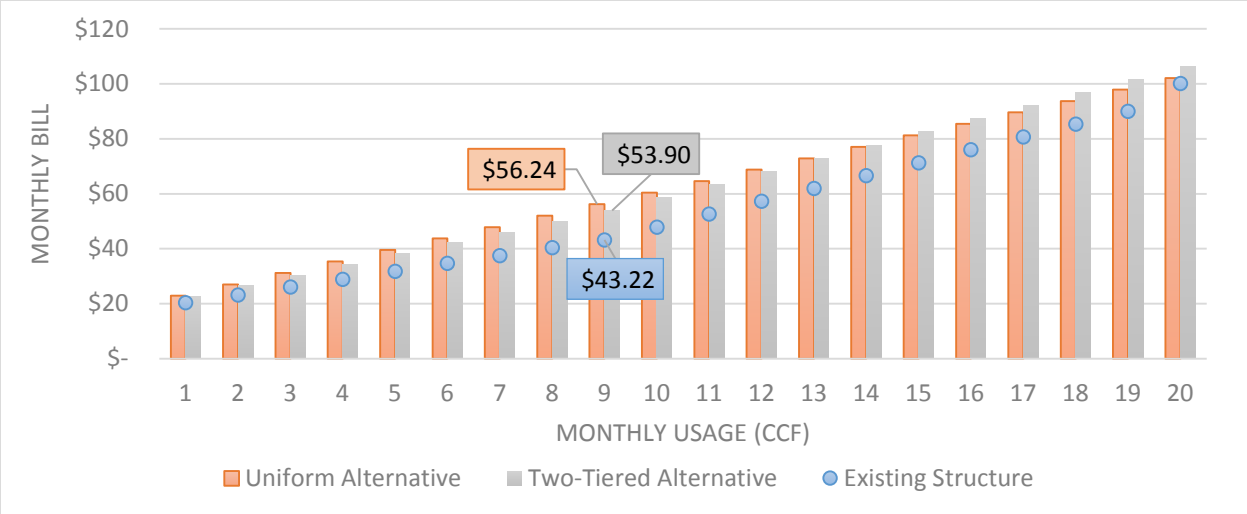
POTABLE WATER RATE PAYER IMPACTS

Overall bill impacts are dependent upon water demand. Throughout the rate-setting process, customer understanding and customer acceptance is paramount. As such the proposed rates are streamlined and updated to reflect current customer demands and impacts on the system. This simplification and adjustment to rates, however, impacts all customers at varying levels. For water, the proposed 12 percent revenue adjustment in year one will not equate to a 12 percent bill increase to all customers. The increase will vary based on the customer's meter size, usage, and services provided. The following figure illustrates the expected water bill impact for an SFR customer with a 1-inch meter and 9 CCF monthly usage with both the uniform and two-tier alternative. The bill amount shown includes the fixed monthly charge of $18.71 in FY2018, plus the commodity rate, which in FY2018 is proposed to be $3.91 per ccf for SFR customers up to 9 ccf in Tier 1 and $4.77 in Tier 2. This represents about 95 percent of customers since only 5 percent of customers use over 20 CCF per month. Approximately 30 percent of customers use over 9 CCF per month.

The Proposed Two-Tiered alternative total of $53.90 = $18.71 (fixed monthly service charge) + $35.19 (variable rate of $3.91/ccf x 9 ccf). Note water above 9 ccf would be charged at rate of $4.77.

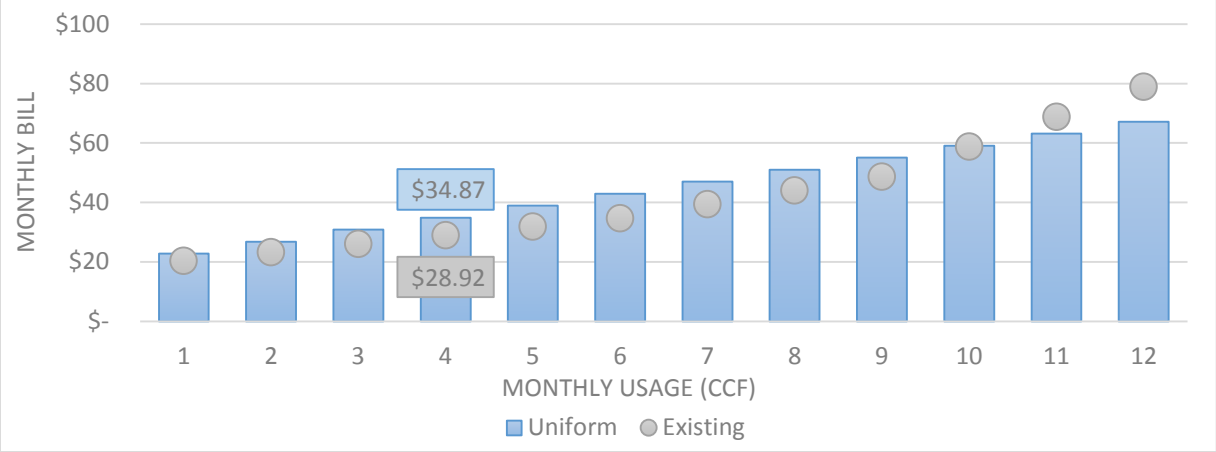
The Proposed Uniform Rate total of $56.24 = $18.71 (fixed monthly service charge) + $37.53 (uniform rate of $4.17/ccf x 9 ccf).

FIGURE 5-2 BILL IMPACT EXAMPLE FOR 1" METER, 9 CCF MONTHLY USAGE - SFR CUSTOMER



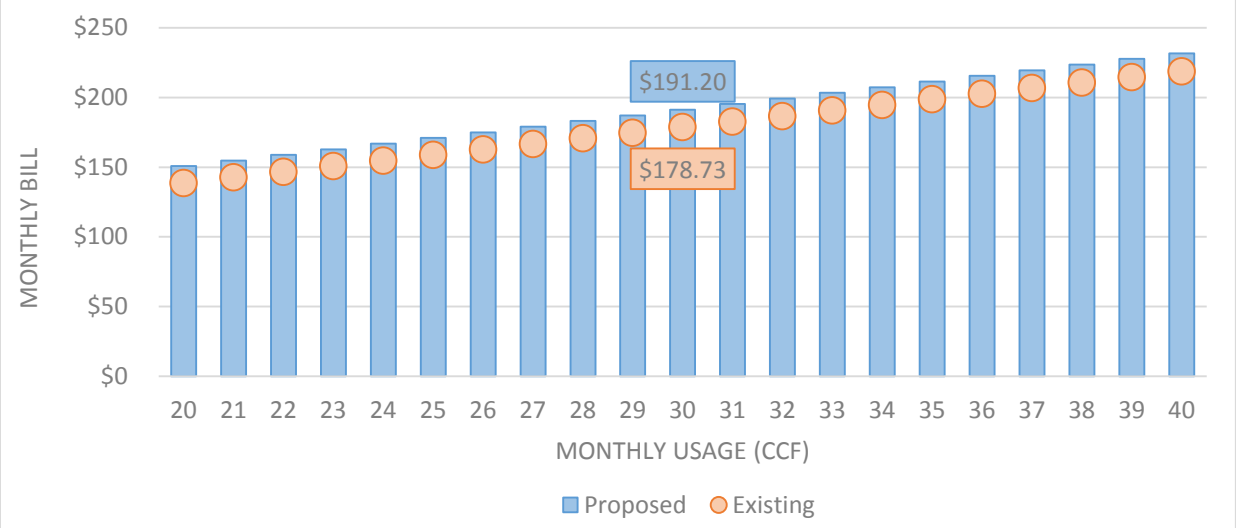
The following figure illustrates the expected water bill impact for a MFR customer with a 1-inch meter and 4 CCF monthly usage.

FIGURE 5-3 BILL IMPACT EXAMPLE FOR 1" METER, 4 CCF MONTHLY USAGE - MFR CUSTOMER



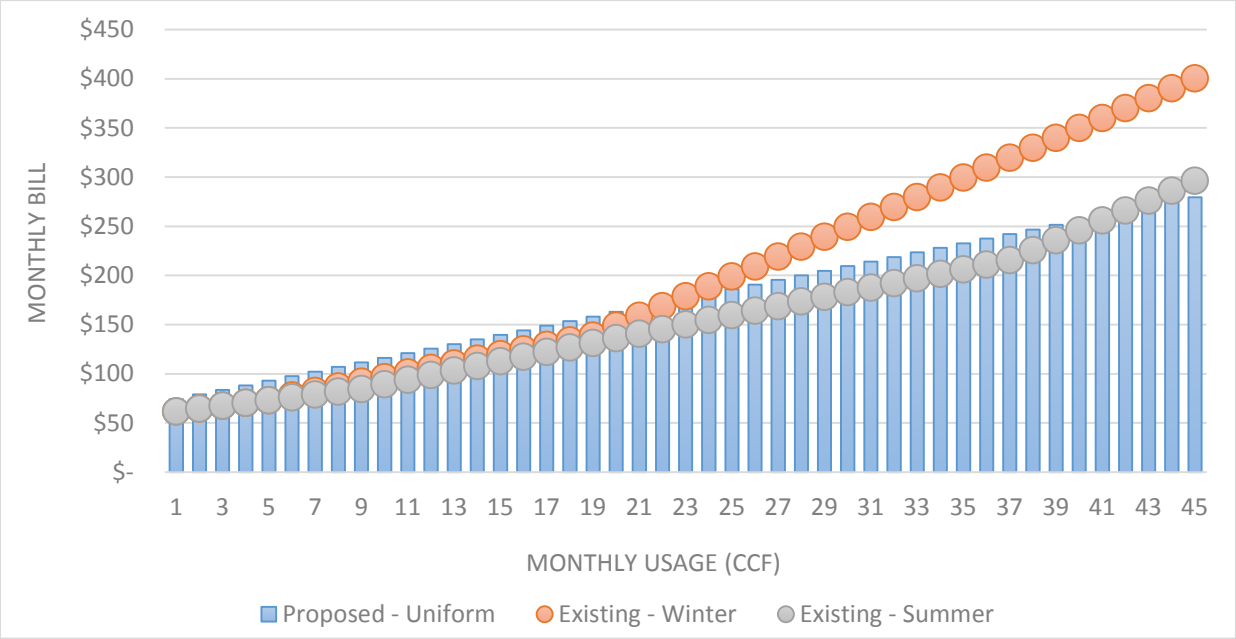
The following figure illustrates the expected water bill impact for a Commercial customer with a 2-inch meter and 30 CCF monthly usage. Fixed charges will experience larger increases in future years as greater fixed cost recovery is phased in.

FIGURE 5-4 BILL IMPACT EXAMPLE FOR 2" METER, 30 CCF MONTHLY USAGE - COMMERCIAL CUSTOMER



The following figure illustrates the expected water bill impact for a Potable Irrigation customer with a 2-inch meter and 10,000 ft^2 of irrigable area.

FIGURE 5-5 BILL IMPACT EXAMPLE FOR 2" METER, 10,000 SQ FT MONTHLY USAGE - POTABLE IRRIGATION CUSTOMER

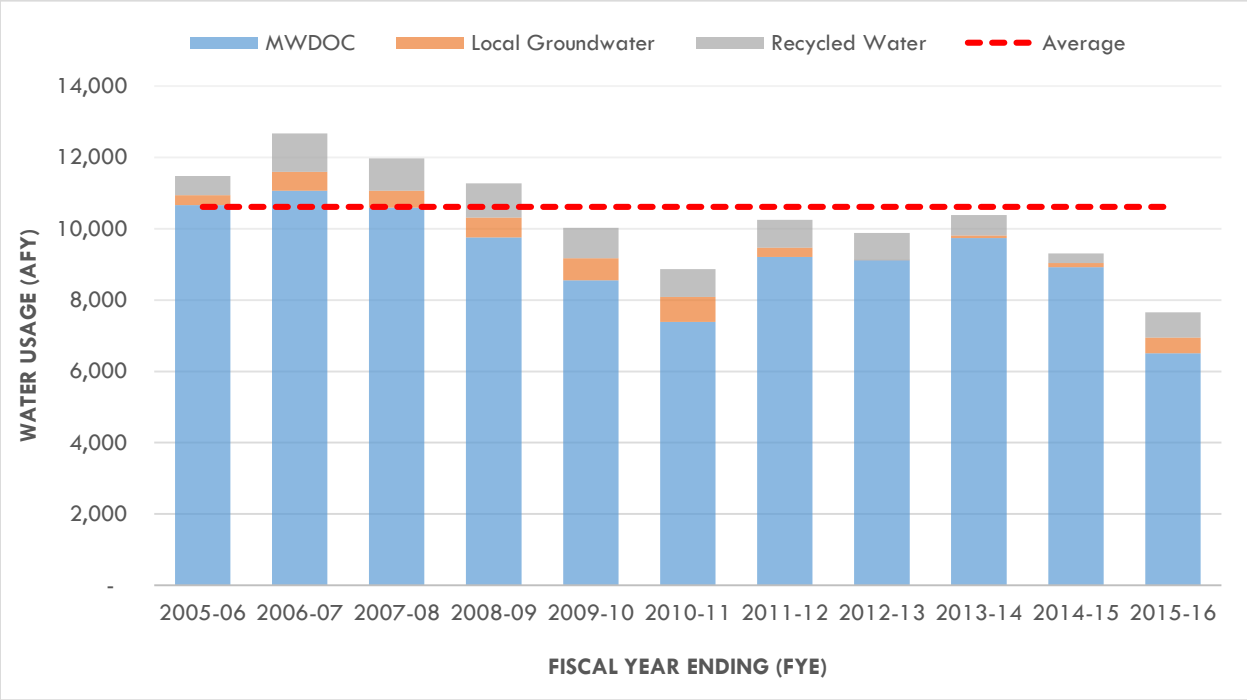


The proposed rates are designed to equitably recover the City's current and forecasted expenditures. The rate structure has been refined to provide enhanced fixed cost recovery, respond to changes in customer demands, and better mirror the percentage of fixed expenditures. As illustrated, the blue bars are less volatile than the existing rate structure (due to the new, higher fixed charges).

6 Recycled Water

The City owns and operates a WRP located within the City. In 1995, the City completed a recycled water use master plan that was updated in 2007 with input from MWDOC and SOCWA. Recycled water provides flexibility and reliability during drought conditions as imported water supplies diminish. The City currently owns and operates a 5.0 MGD WRP that produces recycled water to be used for irrigation. The usage is limited to landscape irrigation with a tertiary treatment level. The projected 2015 recycled water use from the City's 2010 Urban Water Management Plan was compared to the 2015 actual recycled water use as shown in Figure 6-1.

FIGURE 6-1 10-YEAR HISTORICAL ANNUAL WATER USAGE (ACRE FEET PER YEAR)



Recycled water for 2015 was 18 percent of what was predicted for 2015 in the 2010 UWMP. Demand for recycled water dropped significantly from 2010 to 2015 due to plant shutdown for the construction of the treatment plant expansion. The City's RW system is separate from the potable water system and therefore has distinct costs associated with it. This analysis aims to ensure that RW customers only pay for cost of RW-related services.

Revenue Requirements

The goal of the RW enterprise is to equitably recover costs. Currently, the RW system is managed as program 465 – Water Reclamation – under the Water Fund. In FY 2015, the City completed the expansion of its WRP from 2.2 MGD to 5.0 MGD peak capacity. In addition to increased operating costs and depreciation, the expansion project costs of approximately $24.4 million was financed by a $14.4 million State Revolving Fund (SRF) loan, grants, and funds from the City's depreciation reserves. The project

included a reclamation plant expansion, a pump station, pipelines, and the conversion of a recycled water reservoir. The $14.4 million has an interest rate of 2.2% payable with the loan to be paid over a period of 20 years.

The challenge lies in managing the debt service payments that are recently being incurred. Just as with the water enterprise, RW expenditures must align with use and revenues. The following tables provide a five-year forecast of the City's projected RW revenue requirements without any revenue adjustments and with revenue adjustments based on an implementation date of January 1, 2018.

TABLE 6-1 RECYCLED WATER SYSTEM OPERATING REVENUES AND EXPENDITURES WITHOUT ADJUSTMENTS

CATEGORY	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Total Operating Revenues [1]	$1,599	$1,610	$1,617	$1,621	$1,625
Total Operating Expenditures	$1,007	$1,038	$1,068	$1,101	$1,135
Total Debt Service	$901	$901	$901	$901	$901
Total Expenditures	$1,908	$1,939	$1,969	$2,002	$2,036
Debt Coverage[2]	0.70x	0.68x	0.65x	0.62x	0.59x
Cash Flow Surplus/(Deficit)	$(308)	$(329)	$(352)	$(381)	$(411)

Note

1. All figures are in thousands of dollars and rounded.
2. Debt coverage is not a factor as all water revenues are available (for coverage).
3. The full table can be found in the Appendices.

With the proposed increases, the recycled water system's forecasted to generate sufficient cash flow to cover costs and fully support its own debt coverage.

TABLE 6-2 RECYCLED WATER SYSTEM OPERATING REVENUES AND EXPENDITURES WITH ADJUSTMENTS

BUDGET ITEM	FYE 2018 [1]	FYE 2019	FYE 2020	FYE 2021	FYE 2022
Total Operating Revenues	$1,599	$1,802	$1,971	$2,152	$2,221
Total Expenditures	(1,908)	(1,939)	(1,969)	(2,002)	(2,036)
Recommended Revenue Increase	12.0%	9.0%	9.0%	3.0%	2.0%
Implementation Date	January 2018	January 2019	January 2020	January 2021	January 2022
Revenues from Increase	192	144	156	85	44
Less: Revenue Increase Delay	(96)	(81)	(89)	(32)	(22)
Revenues after Increase	$1,695	$1,883	$2,059	$2,184	$2,243
Resulting Cash Flow Surplus/(Deficit)	**$(212)**	**$(56)**	**$91**	**$183**	**$207**
Debt Coverage	*0.81x*	*0.98x*	*1.14x*	*1.25x*	*1.27x*

Note

1. All figures are in thousands of dollars and rounded.

OPERATING AND CAPITAL BUDGET PROJECTIONS

Debt Service

The City currently has no debt in the potable water enterprise fund, but $14.4 million in the recycled water enterprise issued through an SRF loan to fund the new facilities as described above. A debt service reserve fund has been established to meet the SRF requirement that the City's reserve fund equal to one year's debt service prior to the construction completion date. The reserve fund shall be maintained for the full term of the financing agreement.

Under the existing RW rates, the City is forecasted to fall short on both tests of its revenue requirement. Significant capital expenditures and debt issuances will bring the City's debt coverage ratio down below the target threshold of 1.20 times, and expenditures will continue to exceed available revenues necessitating greater use of cash reserves. Under the proposed rates, assuming no additional revenues, the City is not projected to meet its targeted bond coverage obligation of 1.20 times debt service; however, in total (combined with potable) there are sufficient revenues to satisfy the bond obligations.

Recycled Water Rate Recommendation

Carollo recommends a five-year rate structure with annual rate increase from FYE 2018 to FYE 2022 by 12%, 9%, 9%, 3%, and 2%, respectively, in order to be self-sufficient. RW rates will be uniform as they serve a singular heterogeneous user group. The calculation for these rates follows the same steps as the other customer classes. RW costs were separately identified and the rate increase recommendation is based directly on the percent difference in revenue needed by demand ($/CCF). The overall bill impact varies by RW usage.

TABLE 6-3 PROPOSED RECYCLED WATER RATE

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022
RW Rate Revenue	$1,387	$1,579	$1,741	$1,919	$1,983
RW Usage (CCF)	594,583	605,803	617,023	617,023	617,023
Recycled Water Rate ($/CCF) (1)	$2.66	$2.87	$3.11	$3.21	$3.29

Notes

1. Rates have been rounded up to the nearest $0.01.

7 APPENDICES

City of San Clemente

Operating Budget - Excludes RW

	Budget FYE 2018	Escalation Factors	YoY % 16 - '17	% Fixed	% Variable	Budget FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Revenues							Forecasted -->									
Water Sales	*Increases removed*															
Metered Water Sales	11,137,180	*--Revenue Sheet--*				$ 11,137,748	$ 12,065,140	$ 12,844,150	$ 13,693,271	$ 14,001,785	$ 14,213,631	$ 14,429,715	$ 14,650,119	$ 14,874,932	$ 15,104,242	$ 15,338,137
Fixed Water Service Charge	4,318,800	*--Revenue Sheet--*				$ 4,318,800	$ 5,246,193	$ 6,025,203	$ 6,874,324	$ 7,182,838	$ 7,394,684	$ 7,610,767	$ 7,831,172	$ 8,055,985	$ 8,285,294	$ 8,519,189
Total Water Sales	**$ 15,455,980**					**$ 15,456,548**	**$ 17,311,333**	**$ 18,869,353**	**$ 20,567,595**	**$ 21,184,623**	**$ 21,608,315**	**$ 22,040,482**	**$ 22,481,291**	**$ 22,930,917**	**$ 23,389,535**	**$ 23,857,326**
Other Revenues																
Water Acreage Fees	1,000	No Inflation				1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
M.W.D. Reclaimed Water Credit	175,000	*--RW Sheet--*														
Late Payment Charges	300,000	No Inflation				300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000	300,000
Excess Water Use Penalty		One-Time				-	-	-	-	-	-	-	-	-	-	-
Effluent Water Sales		*--RW Sheet--*														
Investment Earnings	130,000	No Inflation				130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000	130,000
Other Revenues, Total	927,500	No Inflation				927,500	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000
Transfer From General Fund		No Inflation				-	-	-	-	-	-	-	-	-	-	-
Transfer From Water Conservation Fund	-	No Inflation				-	350,000	350,000								
Transfer From Sewer Fund	-	No Inflation				-	-	-	-	-	-	-	-	-	-	-
Hydrant Meter Water Sales	40,000	No Inflation				40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000	40,000
Water Application Fee	65,000	No Inflation				65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000	65,000
Backflow Testing Admin Fees	42,000	No Inflation				42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000	42,000
Hydrant Meter Rentals	15,000	No Inflation				15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Turn On/Reconnection Fee	15,000	No Inflation				15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Water Posting Fee	50,000	No Inflation				50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000	50,000
Meter Installation Fees	30,000	No Inflation				30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000
Exemption Application Fees	2,000	No Inflation				2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
Total Other Revenues	**$ 1,792,500**					**$ 1,617,500**	**$ 1,968,000**	**$ 1,968,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**	**$ 1,618,000**
Total Revenues	**$ 17,248,480**					**$ 17,074,048**	**$ 19,279,333**	**$ 20,837,353**	**$ 22,185,595**	**$ 22,802,623**	**$ 23,226,315**	**$ 23,658,482**	**$ 24,099,291**	**$ 24,548,917**	**$ 25,007,535**	**$ 25,475,326**

City of San Clemente

Operating Budget - Excludes RW

	Budget FYE 2018	Escalation Factors	YoY % 16 - '17	% Fixed	% Variable	Budget FYE 2018	Forecasted --> FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Expenses																
461 Water Administration																
Personnel	$511,350	Labor	100%	100%	0%	511,350	$ 527,000	$ 543,000	$ 559,000	$ 576,000	$ 593,000	$ 611,000	$ 629,000	$ 648,000	$ 667,000	$ 687,000
Supplies	$14,150	Operations	100%	100%	0%	14,150	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000	15,000
Contractual Services	$395,870	Operations	100%	50%	50%	395,870	408,000	420,000	433,000	446,000	459,000	473,000	487,000	502,000	517,000	533,000
Other Charges	$28,560	Operations	100%	100%	0%	28,560	29,000	30,000	31,000	32,000	33,000	34,000	35,000	36,000	37,000	38,000
Capital Outlay	$0	Construction / Capital	0%	100%	0%	-	-	-	-	-	-	-	-	-	-	-
Interdepartmental Charges	$790,270	Operations	100%	100%	0%	790,270	814,000	838,000	863,000	889,000	916,000	943,000	971,000	1,000,000	1,030,000	1,061,000
Interfund Transfers	$ -	Operations	0%	100%	0%	-	-	-	-	-	-	-	-	-	-	-
Total 461 Water Administration	**$ 1,740,200**			**89%**	**11%**	**$ 1,740,200**	**$ 1,793,000**	**$ 1,846,000**	**$ 1,901,000**	**$ 1,958,000**	**$ 2,016,000**	**$ 2,076,000**	**$ 2,137,000**	**$ 2,201,000**	**$ 2,266,000**	**$ 2,334,000**
462 Water Production																
Personnel	$702,820	Labor	100%	100%	0%	702,820	$ 724,000	$ 746,000	$ 768,000	$ 791,000	$ 815,000	$ 839,000	$ 864,000	$ 890,000	$ 917,000	$ 945,000
Supplies	$105,298	Operations	100%	100%	0%	105,298	108,000	111,000	114,000	117,000	121,000	125,000	129,000	133,000	137,000	141,000
Contractual Services	$1,188,450	Operations	100%	50%	50%	1,188,450	1,224,000	1,261,000	1,299,000	1,338,000	1,378,000	1,419,000	1,462,000	1,506,000	1,551,000	1,598,000
Other Charges	$2,748,980	Construction / Capital	100%	50%	50%	2,748,980	2,831,000	2,916,000	3,003,000	3,093,000	3,186,000	3,282,000	3,380,000	3,481,000	3,585,000	3,693,000
Purchased Water	$7,924,132	--Supply Cost Sheet--	100%	0%	100%	7,952,208	7,930,368	7,902,411	7,902,411	7,902,411	7,902,411	7,902,411	7,902,411	7,902,411	7,901,406	7,900,401
Interdepartmental Charges	$302,460	Operations	100%	100%	0%	302,460	312,000	321,000	331,000	341,000	351,000	362,000	373,000	384,000	396,000	408,000
Total 462 Water Production	**$ 12,972,140**			**24%**	**76%**	**$ 13,000,216**	**$ 13,129,368**	**$ 13,257,411**	**$ 13,417,411**	**$ 13,582,411**	**$ 13,753,411**	**$ 13,929,411**	**$ 14,110,411**	**$ 14,296,411**	**$ 14,487,406**	**$ 14,685,401**
463 Transmission & Distribution																
Personnel	$1,786,410	Labor	100%	100%	0%	1,786,410	$ 1,840,000	$ 1,895,000	$ 1,952,000	$ 2,011,000	$ 2,071,000	$ 2,133,000	$ 2,197,000	$ 2,263,000	$ 2,331,000	$ 2,401,000
Supplies	$160,300	Operations	100%	100%	0%	160,300	165,000	170,000	175,000	180,000	185,000	191,000	197,000	203,000	209,000	215,000
Contractual Services	$845,390	Operations	100%	50%	50%	845,390	871,000	897,000	924,000	952,000	981,000	1,010,000	1,040,000	1,071,000	1,103,000	1,136,000
Other Charges	$816,140	Construction / Capital	100%	100%	0%	816,140	841,000	866,000	892,000	919,000	947,000	975,000	1,004,000	1,034,000	1,065,000	1,097,000
Capital Outlay	$0	Operations	0%	100%	0%	-	-	-	-	-	-	-	-	-	-	-
Interdepartmental Charges	$477,230	Operations	100%	100%	0%	477,230	492,000	507,000	522,000	538,000	554,000	571,000	588,000	606,000	624,000	643,000
Interfund Transfers	$0	Operations	0%	100%	0%	-	-	-	-	-	-	-	-	-	-	-
Total 463 Transmission & Distribution	**$ 4,085,470**			**90%**	**10%**	**$ 4,085,470**	**$ 4,209,000**	**$ 4,335,000**	**$ 4,465,000**	**$ 4,600,000**	**$ 4,738,000**	**$ 4,880,000**	**$ 5,026,000**	**$ 5,177,000**	**$ 5,332,000**	**$ 5,492,000**
464 Water Conservation																
Personnel	$117,510	Labor	100%	50%	50%	117,510	$ 121,000	$ 125,000	$ 129,000	$ 133,000	$ 137,000	$ 141,000	$ 145,000	$ 149,000	$ 153,000	$ 158,000
Supplies	$5,500	Operations	100%	50%	50%	5,500	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000	6,000
Contractual Services	$66,000	Operations	100%	50%	50%	66,000	68,000	70,000	72,000	74,000	76,000	78,000	80,000	82,000	84,000	87,000
Other Charges	$7,000	Operations	100%	50%	50%	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000	7,000
Interdepartmental Charges	$51,900	Operations	100%	50%	50%	51,900	53,000	55,000	57,000	59,000	61,000	63,000	65,000	67,000	69,000	71,000
Interfund Transfers	$0	One-Time	0%	50%	50%	-	350,000	350,000								
Total 464 Water Conservation	**$ 247,910**			**50%**	**50%**	**$ 247,910**	**$ 605,000**	**$ 613,000**	**$ 271,000**	**$ 279,000**	**$ 287,000**	**$ 295,000**	**$ 303,000**	**$ 311,000**	**$ 319,000**	**$ 329,000**
465 Water Reclamation																
Total 465 Water Reclamation	**$ 1,007,000**			**0%**	**100%**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Total Expenses	**$ 20,052,720**			**44%**	**56%**	**$ 19,073,796**	**$ 19,736,368**	**$ 20,051,411**	**$ 20,054,411**	**$ 20,419,411**	**$ 20,794,411**	**$ 21,180,411**	**$ 21,576,411**	**$ 21,985,411**	**$ 22,404,406**	**$ 22,840,401**
Other Expenses																
Water Fund Loan Principal	608,720	--RW Sheet--														
Water Fund Loan Interest	291,880	--RW Sheet--														
RW Fixed Charges (Transfer)		--Calculated--		100%	0%	37,126	47,467	54,355	58,283	62,216	66,308	68,435	70,611	72,821	75,079	77,390
Rate Funded Capital		--Funding & CIP--		100%	0%	-	-	-	-	-	-	-	-	-	-	-
Debt Funded Capital (New Debt Service)		--Debt Sheet--		100%	0%	-	-	-	-	-	-	-	-	-	-	-
Total Other Expenses	**$ 900,600**			**100%**	**0%**	**$ 37,126**	**$ 47,467**	**$ 54,355**	**$ 58,283**	**$ 62,216**	**$ 66,308**	**$ 68,435**	**$ 70,611**	**$ 72,821**	**$ 75,079**	**$ 77,390**
Change in Net Assets	**$ (3,704,840)**			**42%**	**58%**	**$ (2,036,874)**	**$ (504,502)**	**$ 731,588**	**$ 2,072,902**	**$ 2,320,997**	**$ 2,365,597**	**$ 2,409,636**	**$ 2,452,270**	**$ 2,490,686**	**$ 2,528,051**	**$ 2,557,535**
Income before depreciation (excludes non-cash expenditures)						*$ 554,796*	*$ 2,164,919*	*$ 3,481,090*	*$ 4,904,889*	*$ 5,237,944*	*$ 5,370,053*	*$ 5,504,225*	*$ 5,639,697*	*$ 5,773,736*	*$ 5,909,593*	*$ 6,040,523*

City of San Clemente

Debt Summary

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028	FYE 2029
Water Fund State Revolving Fund Loan												
Interest	595,616	595,616	608,719	622,111	635,797	649,785	664,080	678,690	693,621	708,881	724,476	740,415
Principal	304,987	304,987	291,883	278,491	264,805	250,817	236,522	221,912	206,981	191,722	176,126	160,188
Total Existing Payments	**$900,603**	**$900,603**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,603**	**$900,602**	**$900,603**
Summary of Existing Debt												
Interest	$595,616	$595,616	$608,719	$622,111	$635,797	$649,785	$664,080	$678,690	$693,621	$708,881	$724,476	$740,415
Principal	$304,987	$304,987	$291,883	$278,491	$264,805	$250,817	$236,522	$221,912	$206,981	$191,722	$176,126	$160,188
Total Existing Payments	**$900,603**	**$900,603**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,603**	**$900,602**	**$900,603**
Summary of Future Debt												
Interest Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Principal Payment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Future Payments	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Debt Payments	**$900,603**	**$900,603**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,602**	**$900,603**	**$900,602**	**$900,603**

Debt Assumptions	*FYE 2018*	*FYE 2019*	*FYE 2020*	*FYE 2021*	*FYE 2022*	*FYE 2023*	*FYE 2024*	*FYE 2025*	*FYE 2026*	*FYE 2027*	*FYE 2028*	*FYE 2029*
Term (yrs)	30 years	30 years	30 years	30 years	30 years	30 years	30 years	30 years	30 years	30 years	30 years	30 years
Interest Rate	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Issuance Costs	2%	0%	0%	0%	2%	2%	2%	2%	2%	2%	2%	2%
Reserve Requirement	10%	10%	5%	5%	10%	10%	10%	10%	10%	10%	10%	10%
Capitalized Interest	0 years	0 years	4 years	1 years	0 years	0 years	0 years	0 years	0 years	0 years	0 years	0 years
Loan Type	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard

Projected Debt Forecast	*FYE 2018*	*FYE 2019*	*FYE 2020*	*FYE 2021*	*FYE 2022*	*FYE 2023*	*FYE 2024*	*FYE 2025*	*FYE 2026*	*FYE 2027*	*FYE 2028*	*FYE 2029*
Bond Proceeds	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Issuance Costs	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Reserve Requirement	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
PAR Amount	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**

Water ed to finance the Recycled Water System Expansion Project construction. The project included a reclamation plant expansion, a pump station, pipelines, and the conversion of a recycled water reservoir.
The $14,370,000 approved loan amount had an interest rate of 2.2% payable with the loan to be paid over a period of 20 years.

City of San Clemente

Funding & Capital Planning

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Identified Capital Funding Needs										
Funded by Rates						-	-	-	-	-
Funded by Depr. Reserves	2,900,000	2,375,000	3,175,000	4,825,000	3,975,000	3,553,500	3,660,105	3,769,908	3,883,005	3,999,496
Funded by Acrearage Reserve	400,000	650,000	40,000	180,000	200,000	302,820	311,905	321,262	330,900	340,827
Funded by Other Agency Rev	500,000	250,000	100,000	506,000	500,000	382,336	393,806	405,620	417,789	430,323
Total	**$3,800,000**	**$3,275,000**	**$3,315,000**	**$5,511,000**	**$4,675,000**	**$4,238,656**	**$4,365,816**	**$4,496,790**	**$4,631,694**	**$4,770,645**
Capital Funding Sources										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Developer Contributions	-	-	-	-	-	-	-	-	-	-
Rate Funding Minimum	-	-	-	-	-	-	-	-	-	-
Expansion Escalated	-	-	-	-	-	-	-	-	-	-
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Capital Funding Assumptions										
	-	-	-	-	-	-	-	-	-	-
Remaining Funding Needs										
Remaining Funding Needs	***$ 3,800,000***	***$ 3,275,000***	***$ 3,315,000***	***$ 5,511,000***	***$ 4,675,000***	***$ 4,238,656***	***$ 4,365,816***	***$ 4,496,790***	***$ 4,631,694***	***$ 4,770,645***
Rate Funded (PAYGO)	-	3,275,000	3,315,000	5,511,000	4,675,000	4,238,656	4,365,816	2,747,965	590,431	-
Reserve Funded	3,800,000	-	-	-	-	-	-	1,748,826	4,041,263	4,770,645
Use of Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Total	**$3,800,000**	**$3,275,000**	**$3,315,000**	**$5,511,000**	**$4,675,000**	**$4,238,656**	**$4,365,816**	**$4,496,790**	**$4,631,694**	**$4,770,645**

City of San Clemente

Funding & Capital Planning

	FYE 2028	FYE 2029	FYE 2030	FYE 2031	FYE 2032	FYE 2033	FYE 2034	FYE 2035	FYE 2036	FYE 2037
Identified Capital Funding Needs										
Funded by Rates	-	-	-	-	-	-	-	-	-	-
Funded by Depr. Reserves	4,119,480	4,243,065	4,370,357	4,501,467	4,636,512	4,775,607	4,918,875	5,066,441	5,218,435	5,374,988
Funded by Acrearage Reserve	351,051	361,583	372,430	383,603	395,111	406,965	419,174	431,749	444,701	458,042
Funded by Other Agency Rev	443,232	456,529	470,225	484,332	498,862	513,828	529,242	545,120	561,473	578,318
Total	**$4,913,764**	**$5,061,177**	**$5,213,012**	**$5,369,403**	**$5,530,485**	**$5,696,399**	**$5,867,291**	**$6,043,310**	**$6,224,609**	**$6,411,348**
Capital Funding Sources										
Grants	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
Developer Contributions	-	-	-	-	-	-	-	-	-	-
Rate Funding Minimum	-	-	-	-	-	-	-	-	-	-
Expansion Escalated	-	-	-	-	-	-	-	-	-	-
Total	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Capital Funding Assumptions										
	-	-	-	-	-	-	-	-	-	-
Remaining Funding Needs										
Remaining Funding Needs	***$ 4,913,764***	***$ 5,061,177***	***$ 5,213,012***	***$ 5,369,403***	***$ 5,530,485***	***$ 5,696,399***	***$ 5,867,291***	***$ 6,043,310***	***$ 6,224,609***	***$ 6,411,348***
Rate Funded (PAYGO)	-	5,061,177	5,213,012	5,369,403	5,530,485	5,696,399	5,867,291	6,043,310	6,224,609	6,411,348
Reserve Funded	4,913,764	-	-	-	-	-	-	-	-	-
Use of Bond Proceeds	-	-	-	-	-	-	-	-	-	-
Total	**$4,913,764**	**$5,061,177**	**$5,213,012**	**$5,369,403**	**$5,530,485**	**$5,696,399**	**$5,867,291**	**$6,043,310**	**$6,224,609**	**$6,411,348**

City of San Clemente

Water Customer Data

Meter Size	Number of Accounts (for service charge)	Equivalent Capacity Factor	Total TE	July	August	September	October	November	December	January	February	March	April	May	June	Total (HCF)
System Total (Excludes Fire)	**Accounts (A)**	**AWWA Ratio (B)**	**Meter Equivalents (A * B)**													**Total (HCF)**
5/8"	-		-	277,377	276,948	284,182	252,217	223,526	230,326	171,969	192,691	204,019	245,927	267,543	327,477	**2,954,202**
3/4"	-	1.00	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1"	16,110	1.00	16,242	-	-	-	-	-	-	-	-	-	-	-	-	**-**
1 1/2"	291	3.33	1,087	-	-	-	-	-	-	-	-	-	-	-	-	**-**
2"	701	5.33	3,376	-	-	-	-	-	-	-	-	-	-	-	-	**-**
3"	18	11.67	198	-	-	-	-	-	-	-	-	-	-	-	-	**-**
4"	14	21.00	315	-	-	-	-	-	-	-	-	-	-	-	-	**-**
6"	8	43.33	477	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**17,142**		**21,695**	**277,377**	**276,948**	**284,182**	**252,217**	**223,526**	**230,326**	**171,969**	**192,691**	**204,019**	**245,927**	**267,543**	**327,477**	**2,954,202**

Summary (Excl. Fire)	**Accounts**	**Meter Equivalents**	Summer	Summer	Summer	Winter	Winter	Winter	Winter	Winter	Winter	Summer	Summer	Summer	Total (HCF)
Single Family Residential	8,797	8,807	87,602	88,078	87,356	78,774	71,178	75,317	62,768	66,229	68,252	78,951	79,501	95,110	**939,116**
Single Family Residential - Large Lot	3,426	3,552	56,476	56,174	54,998	49,040	42,755	41,531	31,758	36,799	37,312	46,814	48,333	60,406	**562,396**
Multi Family Residential - Mastered Met	1,691	2,898	40,438	38,717	39,474	34,223	32,476	36,306	34,582	33,044	35,763	36,294	33,912	40,103	**435,332**
Multi Family Residential - Ind Meter	1,904	1,939	8,620	8,414	8,248	7,584	6,934	8,333	8,246	7,945	7,890	8,333	7,869	8,647	**97,063**
Commercial Potable	881	2,577	29,785	30,189	30,402	27,305	25,351	26,732	23,193	24,086	27,001	28,565	27,741	30,594	**330,944**
Irrigation Potable	386	1,671	48,041	49,816	47,138	42,318	34,702	30,699	8,845	17,613	19,666	29,298	44,442	55,334	**427,912**
Non-Potable*	57	250													
Class #8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Class #9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**-**
Total	**17,142**	**21,695**	**270,962**	**271,388**	**267,616**	**239,244**	**213,396**	**218,918**	**169,392**	**185,716**	**195,884**	**228,255**	**241,798**	**290,194**	**2,792,763**

Allocation & Peaking Factors	**% of Accounts**	**% of MEUs**	**% of Usage**	**Incremental Max (Max - Min)**	**WQA Usage**	**Incremental Max (Max - Winter)**	**Summer Usage**	**Summer Peak Weighted**	**Max Peak Weighted**	**Min Peak**	**Avg**	**Summer Peak**	**Max Peak**	**Weighted Demand**
Single Family Residential	51%	41%	34%	26%	36%	28%	33%	0.33	0.33	0.80	1.00	1.10	1.22	3,815,908
Single Family Residential - Large Lot	20%	16%	23%	23%	19%	24%	21%	0.20	0.21	0.68	1.00	1.16	1.29	2,338,395
Multi Family Residential - Mastered Met	10%	13%	15%	6%	18%	7%	15%	0.15	0.14	0.90	1.00	1.06	1.11	1,719,353
Multi Family Residential - Ind Meter	11%	9%	3%	1%	4%	1%	3%	0.03	0.03	0.86	1.00	1.04	1.07	376,126
Commercial Potable	5%	12%	12%	6%	13%	6%	11%	0.11	0.11	0.84	1.00	1.07	1.11	1,303,045
Irrigation Potable	2%	8%	13%	37%	8%	34%	17%	0.18	0.19	0.25	1.00	1.34	1.55	1,894,607
Non-Potable*	0%	1%	0%	0%	-		-	-	-	-	-	-	-	-
Class #8	0%	0%	0%	0%	-		-	-	-	-	-	-	-	-
Class #9	0%	0%	0%	0%	-		-	-	-	-	-	-	-	-
Weighted HCF					1,991,688		2,792,763	3,176,634	3,486,348					

City of San Clemente

Revenue Requirement Analysis

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Cash Flow test											
Operating Revenues											
Total Water Sales	$ 15,456,548	$ 17,311,333	$ 18,869,353	$ 20,567,595	$ 21,184,623	$ 21,608,315	$ 22,040,482	$ 22,481,291	$ 22,930,917	$ 23,389,535	$ 23,857,326
Total Other Revenues	1,617,500	1,968,000	1,968,000	1,618,000	1,618,000	1,618,000	1,618,000	1,618,000	1,618,000	1,618,000	1,618,000
Total Operating Revenues	**$ 17,074,048**	**$ 19,279,333**	**$ 20,837,353**	**$ 22,185,595**	**$ 22,802,623**	**$ 23,226,315**	**$ 23,658,482**	**$ 24,099,291**	**$ 24,548,917**	**$ 25,007,535**	**$ 25,475,326**
Expenses											
Operating expenses:											
461 Water Administration	$1,740,200	$1,793,000	$1,846,000	$1,901,000	$1,958,000	$2,016,000	$2,076,000	$2,137,000	$2,201,000	$2,266,000	$2,334,000
462 Water Production	13,000,216	13,129,368	13,257,411	13,417,411	13,582,411	13,753,411	13,929,411	14,110,411	14,296,411	14,487,406	14,685,401
463 Transmission & Distribution	4,085,470	4,209,000	4,335,000	4,465,000	4,600,000	4,738,000	4,880,000	5,026,000	5,177,000	5,332,000	5,492,000
464 Water Conservation	247,910	605,000	613,000	271,000	279,000	287,000	295,000	303,000	311,000	319,000	329,000
465 Water Reclamation	-	-	-	-	-	-	-	-	-	-	-
Total Other Expenses	37,126	47,467	54,355	58,283	62,216	66,308	68,435	70,611	72,821	75,079	77,390
Total Operating Expenditures	**$ 19,110,921**	**$ 19,783,835**	**$ 20,105,766**	**$ 20,112,693**	**$ 20,481,626**	**$ 20,860,718**	**$ 21,248,846**	**$ 21,647,021**	**$ 22,058,231**	**$ 22,479,484**	**$ 22,917,791**
Total Expenditures for Cash Flow Test	**$ 19,110,921**	**$ 19,783,835**	**$ 20,105,766**	**$ 20,112,693**	**$ 20,481,626**	**$ 20,860,718**	**$ 21,248,846**	**$ 21,647,021**	**$ 22,058,231**	**$ 22,479,484**	**$ 22,917,791**
Cash Flow Surplus (Deficit)	**$ (2,036,874)**	**$ (504,502)**	**$ 731,588**	**$ 2,072,902**	**$ 2,320,997**	**$ 2,365,597**	**$ 2,409,636**	**$ 2,452,270**	**$ 2,490,686**	**$ 2,528,051**	**$ 2,557,535**
Debt Coverage Test											
Debt Coverage Revenues	$ 17,074,048	$ 19,279,333	$ 20,837,353	$ 22,185,595	$ 22,802,623	$ 23,226,315	$ 23,658,482	$ 24,099,291	$ 24,548,917	$ 25,007,535	$ 25,475,326
Expenditures											
Operating Expenditures	$ 18,210,318	$ 18,883,232	$ 19,205,164	$ 19,212,091	$ 19,581,024	$ 19,960,116	$ 20,348,244	$ 20,746,419	$ 21,157,629	$ 21,578,881	$ 22,017,189
Less: Depreciation	$ (2,748,980)	$ (2,831,000)	$ (2,916,000)	$ (3,003,000)	$ (3,093,000)	$ (3,186,000)	$ (3,282,000)	$ (3,380,000)	$ (3,481,000)	$ (3,585,000)	$ (3,693,000)
Total Debt Service	900,603	900,603	900,602	900,602	900,602	900,602	900,602	900,602	900,602	900,603	900,602
Coverage Requirement (Target)	450,302	450,302	450,301	450,301	450,301	450,301	450,301	450,301	450,301	450,302	450,301
Total Expenditures	**$ 16,812,243**	**$ 17,403,136**	**$ 17,640,067**	**$ 17,559,994**	**$ 17,838,927**	**$ 18,125,019**	**$ 18,417,147**	**$ 18,717,322**	**$ 19,027,532**	**$ 19,344,786**	**$ 19,675,092**
Bond Coverage Surplus (Deficit)	**$ 261,805**	**$ 1,876,197**	**$ 3,197,287**	**$ 4,625,601**	**$ 4,963,696**	**$ 5,101,296**	**$ 5,241,335**	**$ 5,381,969**	**$ 5,521,385**	**$ 5,662,750**	**$ 5,800,234**
Pre-adjustment Coverage	*1.79x*	*3.58x*	*5.05x*	*6.64x*	*7.01x*	*7.16x*	*7.32x*	*7.48x*	*7.63x*	*7.79x*	*7.94x*

City of San Clemente

Revenue Requirement Analysis

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Revenue Requirement Calculation											
Surplus / (Shortfall) - Pre Increase	$ (2,036,874)	$ (504,502)	$ 731,588	$ 2,072,902	$ 2,320,997	$ 2,365,597	$ 2,409,636	$ 2,452,270	$ 2,490,686	$ 2,528,051	$ 2,557,535
	Need Cash Flow	*Need Cash Flow*	*Surplus*	*Surplus*	*Surplus*	*Surplus*	*Surplus*	*Surplus*	*Surplus*	*Surplus*	*Surplus*
Month of Revenue Adjustment	January	January	January	January	January	January	January	January	January	January	January
Pre-Increase Rate Revenue	*$ 17,074,048*	*$ 19,279,333*	*$ 20,837,353*	*$ 22,185,595*	*$ 22,802,623*	*$ 23,226,315*	*$ 23,658,482*	*$ 24,099,291*	*$ 24,548,917*	*$ 25,007,535*	*$ 25,475,326*
Calculated Revenue Increase	**27.0%**	**6.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Revenue Increase Override	12%	9%	9%	3%	2%	2%	2%	2%	2%	2%	2%
Utilized Revenue Increase	**12.0%**	**9.0%**	**9.0%**	**3.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Cumulative Rate Increase (%)		*9%*	*19%*	*22%*	*25%*	*27%*	*30%*	*32%*	*35%*	*38%*	*41%*
Resulting Cash Flows											
Rate Revenues before revenue adjustment	$ 15,456,548	$ 17,311,333	$ 18,869,353	$ 20,567,595	$ 21,184,623	$ 21,608,315	$ 22,040,482	$ 22,481,291	$ 22,930,917	$ 23,389,535	$ 23,857,326
Revenues from revenue adjustment	1,854,786	1,558,020	1,698,242	617,028	423,692	432,166	440,810	449,626	458,618	467,791	477,147
Less: Revenue increase delay	(927,393)	(779,010)	(849,121)	(308,514)	(211,846)	(216,083)	(220,405)	(224,813)	(229,309)	(233,895)	(238,573)
Less: Expenditures (from cash flow)	$ (19,110,921)	$ (19,783,835)	$ (20,105,766)	$ (20,112,693)	$ (20,481,626)	$ (20,860,718)	$ (21,248,846)	$ (21,647,021)	$ (22,058,231)	$ (22,479,484)	$ (22,917,791)
Plus: Other Revenues	$ 1,617,500	$ 1,968,000	$ 1,968,000	$ 1,618,000	$ 1,618,000	$ 1,618,000	$ 1,618,000	$ 1,618,000	$ 1,618,000	$ 1,618,000	$ 1,618,000
Cash Flow	**$ (1,109,481)**	**$ 274,508**	**$ 1,580,708**	**$ 2,381,416**	**$ 2,532,843**	**$ 2,581,680**	**$ 2,630,041**	**$ 2,677,083**	**$ 2,719,995**	**$ 2,761,947**	**$ 2,796,108**
Operating Fund Target											
Debt Coverage Target	*2.82x*	*4.45x*	*5.99x*	*6.98x*	*7.25x*	*7.40x*	*7.56x*	*7.73x*	*7.89x*	*8.05x*	*8.21x*
Rate Revenue	*$ 16,383,940*	*$ 18,090,343*	*$ 19,718,474*	*$ 20,876,109*	*$ 21,396,469*	*$ 21,824,399*	*$ 22,260,887*	*$ 22,706,104*	*$ 23,160,226*	*$ 23,623,431*	*$ 24,095,899*
Revenue Requirement (generated)	*$ 17,311,333*	*$ 18,869,353*	*$ 20,567,595*	*$ 21,184,623*	*$ 21,608,315*	*$ 22,040,482*	*$ 22,481,291*	*$ 22,930,917*	*$ 23,389,535*	*$ 23,857,326*	*$ 24,334,473*

City of San Clemente

Water and Sewer Functional Allocation

Cost Allocation Basis: 5 Year Average

Allocation Index	Notes:	Customer	Capacity	Base	Peak	Recycled	Pass Through	As All Others
Customer Only	*Costs that are common to all accounts*	100%						0%
Capacity Only	*Costs that vary based on demand or engineering metrics*		100%					0%
Base Only	*Water costs that are common across all unit of demand*			100%				0%
Peak Only	*Water costs that increase based on peak or demand*				100%			0%
Recycled Only	*Costs specifically related to the Recycled Water*					100%		0%
System Peaking	*Costs that are common to Base/Peak, allocated based on system use*		50%	43.1%	6.9%			0%
Fixed	*Fixed costs that provide both account and capacity benefit*	100%	0%					0%
Capacity / Peaking	*Costs related to peaking (capacity and demand)*		50%	43.1%	6.9%			
Conservation	*Costs allocated to accounts (general benefit) and Peak (targeted use)*	0%			100%			
Purchased Water	*Purchased water cost to be decoupled*						100%	
G&A	*Based on a detailed analysis of G&A line-item costs*		50%					0%
As All Others	*Catch all basis that uses the weighted average of the system allocation*	17%	44%	38%				0%
Resulting Allocation		**9%**	**23%**	**19%**	**6%**	**0%**	**43%**	
Existing Allocation	*calculated from Revenue line-items. Split 50/50 between components*	9%	19%	24%	5%	0%	43%	

	2018	5 Year Average	10 Year Average	Allocation Basis	Customer	Capacity	Base	Peak	Recycled	Pass Through	As All Others
Expenses											
Operating expenses:											
461 Water Administration	$ 1,740,200	$ 1,847,640	$ 1,993,420	Fixed	$ 1,847,640	$ -	$ -	$ -	$ -	$ -	$ -
462 Water Production	5,048,008	5,359,402	5,786,301	Capacity / Peaking	-	2,679,701	2,309,884	369,816	-	-	-
Purchased Water	7,952,208	7,917,961	7,910,085	Purchased Water	-	-	-	-	-	7,917,961	-
463 Transmission & Distribution	4,085,470	4,338,894	4,684,747	Capacity / Peaking	-	2,169,447	1,870,049	299,398	-	-	-
464 Water Conservation	247,910	403,182	353,091	Conservation	-	-	-	403,182	-	-	-
465 Water Reclamation	-	-	-	Recycled Only	-	-	-	-	-	-	-
Total Other Expenses	37,126	51,889	61,270	Fixed	51,889	-	-	-	-	-	-
Total operating expenditures	**$ 19,110,921**	**$ 19,918,968**	**$ 20,788,914**		**$ 1,899,529**	**$ 4,849,148**	**$ 4,179,934**	**$ 1,072,396**	**$ -**	**$ 7,917,961**	**$ -**
Other Revenues											
Water Acreage Fees	(1,000)	(1,000)	(1,000)	As All Others	$ (174)	$ (444)	$ (382)	$ -	$ -	$ -	$ -
M.W.D. Reclaimed Water Credit	-	-	-	Recycled Only	-	-	-	-	-	-	-
Late Payment Charges	(300,000)	(300,000)	(300,000)	As All Others	(52,144)	(133,113)	(114,743)	-	-	-	-
Excess Water Use Penalty	-	-	-	As All Others	-	-	-	-	-	-	-
Effluent Water Sales	-	-	-	Recycled Only	-	-	-	-	-	-	-
Investment Earnings	(130,000)	(130,000)	(130,000)	As All Others	(22,596)	(57,682)	(49,722)	-	-	-	-
Other Revenues, Total	(927,500)	(927,500)	(927,500)	As All Others	(161,211)	(411,542)	(354,747)	-	-	-	-
Transfer From General Fund	-	-	-	As All Others	-	-	-	-	-	-	-
Transfer From Water Conservation Fun	-	-	-	As All Others	-	-	-	-	-	-	-
Transfer From Sewer Fund	-	-	-	As All Others	-	-	-	-	-	-	-
Hydrant Meter Water Sales	(40,000)	(40,000)	(40,000)	As All Others	(6,953)	(17,748)	(15,299)	-	-	-	-
Water Application Fee	(65,000)	(65,000)	(65,000)	As All Others	(11,298)	(28,841)	(24,861)	-	-	-	-
Backflow Testing Admin Fees	(42,000)	(42,000)	(42,000)	As All Others	(7,300)	(18,636)	(16,064)	-	-	-	-
Hydrant Meter Rentals	(15,000)	(15,000)	(15,000)	As All Others	(2,607)	(6,656)	(5,737)	-	-	-	-
Turn On/Reconnection Fee	(15,000)	(15,000)	(15,000)	As All Others	(2,607)	(6,656)	(5,737)	-	-	-	-
Water Posting Fee	(50,000)	(50,000)	(50,000)	As All Others	(8,691)	(22,186)	(19,124)	-	-	-	-
Meter Installation Fees	(30,000)	(30,000)	(30,000)	As All Others	(5,214)	(13,311)	(11,474)	-	-	-	-
Exemption Application Fees	(2,000)	(2,000)	(2,000)	As All Others	(348)	(887)	(765)	-	-	-	-
Total Other Revenues	**$ (1,617,500)**	**$ (1,617,500)**	**$ (1,617,500)**		**$ (281,142)**	**$ (717,703)**	**$ (618,655)**	**$ -**	**$ -**	**$ -**	**$ -**
Total Rate Revenue to be Collected	$ 17,493,421	$ 18,301,468	$ 19,171,414		$ 1,618,388	$ 4,131,445	$ 3,561,278	$ 1,072,396	$ -	$ 7,917,961	$ -
Reallocation as "As All Others"					$ -	$ -	$ -	$ -	$ -	$ -	
Total Allocation	**$ 17,493,421**	**$ 18,301,468**	**$ 19,171,414**		**$ 1,618,388**	**$ 4,131,445**	**$ 3,561,278**	**$ 1,072,396**	**$ -**	**$ 7,917,961**	

City of San Clemente

Fixed Rate Design

		FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Number of Accounts	*Excludes Fire*	17,539	17,539	17,526	17,515	17,504	17,504	17,504	17,504	17,504	17,504	17,504	17,504
Number of Meter Equivalents	*Excludes Fire*	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664	23,664
Customer Revenue to Recover				$ 1,458,726	$ 1,704,965	$ 1,974,013	$ 2,070,184	$ 2,136,221	$ 2,203,579	$ 2,272,284	$ 2,342,364	$ 2,413,844	$ 2,486,912
Capacity Revenue to Recover	100%	$ -	$ *341,328*	$ 3,341,731	$ 3,905,829	$ 4,522,178	$ 4,742,492	$ 4,893,773	$ 5,048,081	$ 5,205,475	$ 5,366,016	$ 5,529,769	$ 5,697,155
Monthly Component Charge per Account				$ 6.94	$ 8.11	$ 9.40	$ 9.86	$ 10.17	$ 10.49	$ 10.82	$ 11.15	$ 11.49	$ 11.84
Monthly Component Charge per MEU				$ 11.77	$ 13.75	$ 15.92	$ 16.70	$ 17.23	$ 17.78	$ 18.33	$ 18.90	$ 19.47	$ 20.06

Meter Size	Meter Ratios												
3/4"	1.00	$ 16.81	$ 17.48	$ 18.71	$ 21.87	$ 25.33	$ 26.56	$ 27.41	$ 28.27	$ 29.15	$ 30.05	$ 30.97	$ 31.91
1"	1.00	$ 16.81	$ 17.48	$18.71	$21.87	$25.33	$26.56	$27.41	28.27	29.15	30.05	30.97	31.91
1 1/2"	3.33	37.80	39.31	46.17	53.97	62.49	65.53	67.62	69.75	71.93	74.15	76.41	78.72
2"	5.33	56.48	58.73	69.70	81.47	94.34	98.93	102.09	105.31	108.59	111.94	115.35	118.85
3"	11.67	109.77	114.16	144.23	168.59	195.19	204.70	211.23	217.89	224.69	231.62	238.68	245.91
4"	21.00	165.82	172.45	254.07	296.96	343.83	360.58	372.08	383.81	395.78	407.98	420.43	433.16
6"	43.33	318.19	330.91	516.89	604.14	699.48	733.56	756.96	780.83	805.17	830.01	855.34	881.23

Revenue Check

Meter Size	Meter Equivalents	Accounts											
3/4"	1.00	-	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -
1"	1.00	16,191	3,266,049	3,396,224	3,635,203	4,249,166	4,921,416	5,160,396	5,325,544	5,492,635	5,663,612	5,838,475	6,017,223	6,199,858
1 1/2"	3.33	349	158,306	164,630	193,360	226,026	261,708	274,440	283,193	292,113	301,243	310,540	320,005	329,679
2"	5.33	937	635,061	660,360	783,707	916,049	1,060,759	1,112,369	1,147,900	1,184,106	1,220,986	1,258,653	1,296,995	1,336,349
3"	11.67	30	39,517	41,098	51,923	60,692	70,268	73,692	76,043	78,440	80,888	83,383	85,925	88,528
4"	21.00	19	37,807	39,319	57,928	67,707	78,393	82,212	84,834	87,509	90,238	93,019	95,858	98,760
6"	43.33	13	49,638	51,622	80,635	94,246	109,119	114,435	118,086	121,809	125,607	129,482	133,433	137,472
			$4,186,378	**$4,353,253**	**$4,802,756**	**$5,613,886**	**$6,501,664**	**$6,817,544**	**$7,035,599**	**$7,256,612**	**$7,482,573**	**$7,713,552**	**$7,949,440**	**$8,190,646**
		Difference due to Rounding		*$362,771.06*	*$2,299*	*$3,092*	*$5,473*	*$4,868*	*$5,605*	*$4,952*	*$4,814*	*$5,173*	*$5,827*	*$6,580*
		Revenue @ existing rates			$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253	$4,353,253
		Revenue difference from Budgetted			$34,453								

City of San Clemente

Commodity Rate Design

		FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Single Family Residential												
Demand (ccf)		1,684,441	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591	1,727,591
Base Revenue to Recover		$ 5,999,155	$ 2,113,501	$ 2,470,269	$ 2,860,083	$ 2,999,422	$ 3,095,101	$ 3,157,003	$ 3,220,143	$ 3,284,546	$ 3,350,237	$ 3,417,242
Peak Revenue to Recover			$ 443,752	$ 518,659	$ 600,505	$ 629,760	$ 649,849	$ 662,846	$ 676,103	$ 689,625	$ 703,418	$ 717,486
MWDOC Revenue (check)			*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*	*$ 4,543,564*
Base Rate ($/ccf)			$1.23	$1.43	$1.66	$1.74	$1.80	$ 1.83	$ 1.87	$ 1.91	$ 1.94	$ 1.98
Peak Rate ($/ccf)			$ 0.86	$ 1.01	$ 1.16	$ 1.22	$ 1.26	$ 1.28	$ 1.31	$ 1.34	$ 1.36	$ 1.39
MWDOC Blended Rate ($/ccf)			$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63
			$ 0.26									
Tier	% Demand	*FY2016*										
Tier 1		77%	70%	70%	70%	70%	70%	70%	70%	70%	70%	70%
Tier 2		17%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%
Tier 3		5%		0%	0%	0%	0%	0%	0%	0%	0%	0%
Tier	pε											
Tier 1	0%	1,301,305	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314	1,209,314
Tier 2	0%	293,108	518,277	518,277	518,277	518,277	518,277	518,277	518,277	518,277	518,277	518,277
Tier 3	0%	90,027	-	-	-	-	-	-	-	-	-	-
Tier												
Tier 1		$ 2.86	$3.86	$4.06	$4.29	$4.37	$4.43	$4.46	$4.50	$4.54	$4.57	$4.61
Tier 2		4.68	4.72	5.07	5.45	5.59	5.69	5.74	5.81	5.88	5.93	6.00
Tier 3		10.06										
Multi Family Residential												
Demand (ccf)		542,128	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286
Base Revenue to Recover		$ 1,816,646	$ 680,549	$ 795,429	$ 920,950	$ 965,817	$ 996,626	$ 1,016,558	$ 1,036,889	$ 1,057,627	$ 1,078,780	$ 1,100,355
Peak Revenue to Recover			$ 67,342	$ 78,710	$ 91,130	$ 95,570	$ 98,619	$ 100,591	$ 102,603	$ 104,655	$ 106,748	$ 108,883
MWDOC Revenue (check)			*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*	*$ 1,463,032*
Base Rate ($/ccf)			$ 1.23	$ 1.43	$ 1.66	$ 1.74	$ 1.80	$ 1.83	$ 1.87	$ 1.91	$ 1.94	$ 1.98
Peak Rate ($/ccf)			$ 0.13	$ 0.15	$ 0.17	$ 0.18	$ 0.18	$ 0.19	$ 0.19	$ 0.19	$ 0.20	$ 0.20
MWDOC Blended Rate ($/ccf)			$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63
Tier	% Demand											
Tier 1		86%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tier 2		9%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tier 3		4%		0%	0%	0%	0%	0%	0%	0%	0%	0%
Tier	pε											
Tier 1	0%	467,934	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286	556,286
Tier 2	0%	49,822	-	-	-	-	-	-	-	-	-	-
Tier 3	0%	24,373	-	-	-	-	-	-	-	-	-	-
Tier												
Tier 1		$ 2.86	$ 3.99	$ 4.21	$ 4.46	$ 4.55	$ 4.61	$ 4.65	$ 4.69	$ 4.73	$ 4.77	$ 4.81
Tier 2		4.68										
Tier 3		10.06										
Tier 4												

City of San Clemente

Commodity Rate Design

		FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027
Commercial Potable												
Demand (ccf)		346,130	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895
Base Revenue to Recover		$ 1,384,518	$ 435,395	$ 508,891	$ 589,196	$ 617,900	$ 637,611	$ 650,363	$ 663,371	$ 676,638	$ 690,171	$ 703,974
Peak Revenue to Recover			$ 48,884	$ 57,136	$ 66,153	$ 69,375	$ 71,588	$ 73,020	$ 74,481	$ 75,970	$ 77,490	$ 79,039
MWDOC Revenue (check)			*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*	*$ 936,004*
Base Rate ($/ccf)			$ 1.23	$ 1.43	$ 1.66	$ 1.74	$ 1.80	$ 1.83	$ 1.87	$ 1.91	$ 1.94	$ 1.98
Peak Rate ($/ccf)			$ 0.14	$ 0.17	$ 0.19	$ 0.20	$ 0.21	$ 0.21	$ 0.21	$ 0.22	$ 0.22	$ 0.23
MWDOC Blended Rate ($/ccf)			$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63
Tier	% Demand											
Tier 1		100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tier	pε											
Tier 1	0%	346,130	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895	355,895
Tier												
Tier 1		$4.00	$ 4.00	$ 4.23	$ 4.48	$ 4.57	$ 4.64	$ 4.67	$ 4.71	$ 4.76	$ 4.79	$ 4.84
Irrigation Potable												
Demand (ccf)		392,239	390,660	379,440	368,220	368,220	368,220	368,220	368,220	368,220	368,220	368,220
Base Revenue to Recover		$ 1,432,905	$ 477,926	$ 558,602	$ 646,750	$ 678,259	$ 699,895	$ 713,893	$ 728,171	$ 742,734	$ 757,589	$ 772,741
Peak Revenue to Recover			$ 291,320	$ 340,496	$ 394,227	$ 413,433	$ 426,621	$ 435,154	$ 443,857	$ 452,734	$ 461,789	$ 471,024
MWDOC Revenue (check)			*$ 1,027,436*	*$ 997,927*	*$ 968,419*	*$ 968,419*	*$ 968,419*	*$ 968,419*	*$ 968,419*	*$ 968,419*	*$ 968,419*	*$ 968,419*
Base Rate ($/ccf)			$ 1.23	$ 1.48	$ 1.76	$ 1.85	$ 1.91	$ 1.94	$ 1.98	$ 2.02	$ 2.06	$ 2.10
Peak Rate ($/ccf)			$ 0.75	$ 0.90	$ 1.08	$ 1.13	$ 1.16	$ 1.19	$ 1.21	$ 1.23	$ 1.26	$ 1.28
MWDOC Blended Rate ($/ccf)			$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63	$ 2.63
Tier	% Demand											
Tier 1		67%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Tier 2		29%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Tier 3		4%		0%	0%	0%	0%	0%	0%	0%	0%	0%
Tier	pε											
Tier 1	0%	263,153	390,660	379,440	368,220	368,220	368,220	368,220	368,220	368,220	368,220	368,220
Tier 2	0%	114,929	-	-	-	-	-	-	-	-	-	-
Tier 3	0%	14,157	-	-	-	-	-	-	-	-	-	-
Tier												
Tier 1		$ 2.86	$ 4.61	$ 5.01	$ 5.47	$ 5.61	$ 5.70	$ 5.76	$ 5.82	$ 5.88	$ 5.95	$ 6.01
Tier 2		4.68										
Tier 3		10.06										

City of San Clemente

Recycled Water - Operating Budget

	Budget	Escalation	YoY %			Budget	Forecasted -->									
	FYE 2018	Factors	16 - '17	% Fixed	% Variable	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Revenues																
RW Revenues	*Increases removed*															
M.W.D. Reclaimed Water Credit	175,000	No Inflation				175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000	175,000
Effluent Water Sales	1,387,360	No Inflation				1,387,360	1,579,298	1,741,457	1,918,830	1,983,394	2,027,806	2,073,188	2,119,521	2,166,823	2,215,116	2,264,420
RW Fixed Charges (Transfer)		*Includes rate adjustments*				37,126	47,467	54,355	58,283	62,216	66,308	68,435	70,611	72,821	75,079	77,390
Total RW Revenues	**$ 1,562,360**					**$ 1,599,486**	**$ 1,801,765**	**$ 1,970,812**	**$ 2,152,113**	**$ 2,220,609**	**$ 2,269,113**	**$ 2,316,624**	**$ 2,365,131**	**$ 2,414,644**	**$ 2,465,195**	**$ 2,516,810**
Expenses																
465 Water Reclamation																
Personnel	$399,110	Labor	0%	100%	0%	399,110	$ 411,000	$ 423,000	$ 436,000	$ 449,000	$ 462,000	$ 476,000	$ 490,000	$ 505,000	$ 520,000	$ 536,000
Supplies	$171,700	Operations	0%	100%	0%	171,700	177,000	182,000	187,000	193,000	199,000	205,000	211,000	217,000	224,000	231,000
Contractual Services	$306,500	Operations	0%	50%	50%	306,500	316,000	325,000	335,000	345,000	355,000	366,000	377,000	388,000	400,000	412,000
Other Charges	$47,250	Construction / Capital	0%	100%	0%	47,250	49,000	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000
Interdepartmental Charges	$82,440	Operations	0%	100%	0%	82,440	85,000	88,000	91,000	94,000	97,000	100,000	103,000	106,000	109,000	112,000
Total 465 Water Reclamation	**$ 1,007,000**			**85%**	**15%**	**$ 1,007,000**	**$ 1,038,000**	**$ 1,068,000**	**$ 1,101,000**	**$ 1,135,000**	**$ 1,169,000**	**$ 1,205,000**	**$ 1,241,000**	**$ 1,278,000**	**$ 1,317,000**	**$ 1,357,000**
Other Expenses																
Water Fund Loan Principal	608,720	*--Debt Sheet--*		100%	0%	595,616	595,616	608,719	622,111	635,797	649,785	664,080	678,690	693,621	708,881	724,476
Water Fund Loan Interest	291,880	*--Debt Sheet--*		100%	0%	304,987	304,987	291,883	278,491	264,805	250,817	236,522	221,912	206,981	191,722	176,126
Rate Funded Capital		*--Funding & CIP--*		100%	0%	-	-	-	-	-	-	-	-	-	-	-
Debt Funded Capital (New Debt Service)		*--Debt Sheet--*		100%	0%	-	-	-	-	-	-	-	-	-	-	-
Total Other Expenses	**$ 900,600**			**100%**	**0%**	**$ 900,603**	**$ 900,603**	**$ 900,602**	**$ 900,602**	**$ 900,602**	**$ 900,602**	**$ 900,602**	**$ 900,602**	**$ 900,602**	**$ 900,603**	**$ 900,602**
Change in Net Assets	**$ (345,240)**			**92%**	**8%**	**$ (308,117)**	**$ (136,838)**	**$ 2,210**	**$ 150,511**	**$ 185,007**	**$ 199,511**	**$ 211,022**	**$ 223,529**	**$ 236,042**	**$ 247,592**	**$ 259,208**

City of San Clemente

Recycled Water - Revenue Requirement Analysis

	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023	FYE 2024	FYE 2025	FYE 2026	FYE 2027	FYE 2028
Cash Flow Test											
Operating Revenues											
Total RW Revenues	$ 1,599,486	$ 1,801,765	$ 1,970,812	$ 2,152,113	$ 2,220,609	$ 2,269,113	$ 2,316,624	$ 2,365,131	$ 2,414,644	$ 2,465,195	$ 2,516,810
Total Operating Revenues	**$ 1,599,486**	**$ 1,801,765**	**$ 1,970,812**	**$ 2,152,113**	**$ 2,220,609**	**$ 2,269,113**	**$ 2,316,624**	**$ 2,365,131**	**$ 2,414,644**	**$ 2,465,195**	**$ 2,516,810**
Expenses (Operating)											
465 Water Reclamation	$1,007,000	$1,038,000	$1,068,000	$1,101,000	$1,135,000	$1,169,000	$1,205,000	$1,241,000	$1,278,000	$1,317,000	$1,357,000
Other Expenses	900,603	900,603	900,602	900,602	900,602	900,602	900,602	900,602	900,602	900,603	900,602
Total Operating Expenditures	**$ 1,907,603**	**$ 1,938,603**	**$ 1,968,602**	**$ 2,001,602**	**$ 2,035,602**	**$ 2,069,602**	**$ 2,105,602**	**$ 2,141,602**	**$ 2,178,602**	**$ 2,217,603**	**$ 2,257,602**
Total Expenditures for Cash Flow Test	**$ 1,907,603**	**$ 1,938,603**	**$ 1,968,602**	**$ 2,001,602**	**$ 2,035,602**	**$ 2,069,602**	**$ 2,105,602**	**$ 2,141,602**	**$ 2,178,602**	**$ 2,217,603**	**$ 2,257,602**
Cash Flow Surplus (Deficit)	**$ (308,117)**	**$ (136,838)**	**$ 2,210**	**$ 150,511**	**$ 185,007**	**$ 199,511**	**$ 211,022**	**$ 223,529**	**$ 236,042**	**$ 247,592**	**$ 259,208**
Debt Coverage Test											
Debt Coverage Revenues	$ 1,599,486	$ 1,801,765	$ 1,970,812	$ 2,152,113	$ 2,220,609	$ 2,269,113	$ 2,316,624	$ 2,365,131	$ 2,414,644	$ 2,465,195	$ 2,516,810
Expenditures											
Operating Expenditures	$ 1,007,000	$ 1,038,000	$ 1,068,000	$ 1,101,000	$ 1,135,000	$ 1,169,000	$ 1,205,000	$ 1,241,000	$ 1,278,000	$ 1,317,000	$ 1,357,000
Less: Depreciation	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)	$ (38,250)
Total Debt Service	900,603	900,603	900,602	900,602	900,602	900,602	900,602	900,602	900,602	900,603	900,602
Coverage Requirement (Target)	450,302	450,302	450,301	450,301	450,301	450,301	450,301	450,301	450,301	450,302	450,301
Total Expenditures	**$ 2,319,655**	**$ 2,350,655**	**$ 2,380,653**	**$ 2,413,653**	**$ 2,447,653**	**$ 2,481,653**	**$ 2,517,653**	**$ 2,553,653**	**$ 2,590,653**	**$ 2,629,655**	**$ 2,669,653**
Bond Coverage Surplus (Deficit)	**$ (720,169)**	**$ (548,889)**	**$ (409,841)**	**$ (261,540)**	**$ (227,044)**	**$ (212,540)**	**$ (201,029)**	**$ (188,522)**	**$ (176,009)**	**$ (164,460)**	**$ (152,843)**
Pre-adjustment Coverage	*0.70x*	*0.89x*	*1.04x*	*1.21x*	*1.25x*	*1.26x*	*1.28x*	*1.29x*	*1.30x*	*1.32x*	*1.33x*
Revenue Requirement Calculation											
Surplus / (Shortfall) - Pre Increase	$ (720,169)	$ (548,889)	$ (409,841)	$ (261,540)	$ (227,044)	$ (212,540)	$ (201,029)	$ (188,522)	$ (176,009)	$ (164,460)	$ (152,843)
	Need Additional Coverage	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*	*Need Additional Coverage*
Month of Revenue Adjustment	January	January	January	January	January	January	January	January	January	January	January
Pre-Increase Rate Revenue	*$ 1,599,486*	*$ 1,801,765*	*$ 1,970,812*	*$ 2,152,113*	*$ 2,220,609*	*$ 2,269,113*	*$ 2,316,624*	*$ 2,365,131*	*$ 2,414,644*	*$ 2,465,195*	*$ 2,516,810*
Calculated Revenue Increase	**100.0%**	**68.0%**	**46.0%**	**27.0%**	**23.0%**	**21.0%**	**20.0%**	**18.0%**	**17.0%**	**15.0%**	**14.0%**
Revenue Increase Override	12%	9%	9%	3%	2%	2%	2%	2%	2%	2%	2%
Utilized Revenue Increase	**12.0%**	**9.0%**	**9.0%**	**3.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Cumulative Rate Increase (%)		*9%*	*19%*	*22%*	*25%*	*27%*	*30%*	*32%*	*35%*	*38%*	*41%*
Recycled Water Rate	**$ 2.38**	**$ 2.66**	**$ 2.87**	**$ 3.11**	**$ 3.21**	**$ 3.29**	**$ 3.36**	**$ 3.44**	**$ 3.51**	**$ 3.59**	**$ 3.67**
Resulting Cash Flows											
Rate Revenues before revenue adjustment	$ 1,599,486	$ 1,801,765	$ 1,970,812	$ 2,152,113	$ 2,220,609	$ 2,269,113	$ 2,316,624	$ 2,365,131	$ 2,414,644	$ 2,465,195	$ 2,516,810
Revenues from revenue adjustment	191,938	162,159	177,373	64,563	44,412	45,382	46,332	47,303	48,293	49,304	50,336
Less: Revenue increase delay	(95,969)	(81,079)	(88,687)	(32,282)	(22,206)	(22,691)	(23,166)	(23,651)	(24,146)	(24,652)	(25,168)
Less: Expenditures (from cash flow)	$ (1,907,603)	$ (1,938,603)	$ (1,968,602)	$ (2,001,602)	$ (2,035,602)	$ (2,069,602)	$ (2,105,602)	$ (2,141,602)	$ (2,178,602)	$ (2,217,603)	$ (2,257,602)
Cash Flow	**$ (212,148)**	**$ (55,758)**	**$ 90,897**	**$ 182,793**	**$ 207,213**	**$ 222,203**	**$ 234,188**	**$ 247,180**	**$ 260,188**	**$ 272,244**	**$ 284,376**
Operating Fund Target											
Debt Coverage Target	*0.81x*	*0.98x*	*1.14x*	*1.25x*	*1.27x*	*1.29x*	*1.30x*	*1.32x*	*1.33x*	*1.34x*	*1.36x*
Rate Revenue	*$ 1,695,455*	*$ 1,882,845*	*$ 2,059,499*	*$ 2,184,395*	*$ 2,242,815*	*$ 2,291,805*	*$ 2,339,790*	*$ 2,388,782*	*$ 2,438,790*	*$ 2,489,847*	*$ 2,541,978*
Revenue Requirement (generated)	*$ 1,283,403*	*$ 1,470,793*	*$ 1,647,448*	*$ 1,772,344*	*$ 1,830,764*	*$ 1,879,754*	*$ 1,927,739*	*$ 1,976,731*	*$ 2,026,739*	*$ 2,077,795*	*$ 2,129,927*

City of San Clemente

CY 2019 Pass Through Calculation

Line #			FYE 2018
1	**Water Demand w/ water loss (AF)**		
2	Potable		7,513
3	Non Potable - existing		
4	Non Potable - expanded *(deducts from Potable)*		
5	**Available Water Supply by Sources (AF)**		
6	Groundwater		400
7	MWDOC Blended		99,999
8	Existing RW		
9	Expanded RW		0
10	**Water Supply to meet Water Demand (AF)**		
11	Groundwater		400
12	MWDOC Blended		7,113
13	Existing Reclaimed Water		0
14	Expanded Reclaimed Water		0
15	**Water Supply Unit Costs ($/AF)**		
16	Groundwater	$	151
17	MWDOC Blended (CY 2018)		1,015
18	Reclaimed Water		-
19	MWD RTS		452,560
20	MWD Capacity		154,730
21	MWDOC Retail Meter Charge (CY 2018)		209,440
22	SCP O&M Surcharge		8.14
23	EOC Feed #2		4,000
24	**Water Supply Cost ($)**		
25	Fixed Cost		820,730
26	MWDOC Variable Cost		$7,278,073
27	Groundwater		$60,400
28	462-42610-000-00000 PURCHASED WATER		$8,098,803
29	462-43330-000-00000 ELECTRICITY		$60,400
		$	1,164
30	CY 2019 Pass Through Calculation	$	2.68