COST OF SERVICE AND RATE STUDY

Marina Coast Water District

January 2018

Engineers...Working Wonders With Water®

Contents

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Glossary

Term	Description
AF	Acre foot / Acre feet, 1 AF = 435.6 CCF, 326,000 gallons
AWWA	American Water Works Association
Carollo	Carollo Engineers, Inc.
hcf	hundred cubic feet, 1 CCF = 748 gallons
CIP	Capital Improvement Projects
CY	Calendar Year
District	Marina Coast Water District
EDU	Equivalent Dwelling Unit
FY (FYE)	Fiscal Year Ending. The District's fiscal year runs from July 1 to June 30. FYE is the calendar year in which the fiscal year ends (i.e. FYE 2016 covers the fiscal year ending June 30, 2016).
GPCD	Gallons per capita per day
GPD	Gallons per day
M1 Manual	"Principles of Water Rates, Fees and Charges: Manual of Water Supply Practices M1", published by AWWA
MCWD	Marina Coast Water District
MEU	Meter Equivalency Unit
O&M	Operations and Maintenance
Potable Water	Water suitable to be consumed for drinking and other uses.
Recycled Water	Sewage that is treated to remove solids and impurities, and used for non-potable irrigation and commercial and industrial water needs
RUWAP	Regional Urban Water Augmentation Project

1. Introduction and Background

1.1 Introduction

The Marina Coast Water District (MCWD) retained Carollo Engineers, Inc. (Carollo) to conduct a water and sewer rate and fee study (study). This Study includes the development of a five-year financial plan and cost-based water and wastewater user charges through a comprehensive cost of service and rate design analysis.

MCWD operates public water and sewer utilities that are responsible for providing service to the approximately 38,000 residents within the District's service area, as well as many public and commercial institutions. Customers of the water and sewer utilities are located in two service areas, Central Marina (Marina) and the Ord Community (Ord). The operations of the District are further split between water and sewer, resulting in four cost centers, Marina Water, Marina Sewer, Ord Water, and Ord Sewer. The cost centers are maintained as separate enterprises; having distinct budgets, user rates and fees, capacity fees, capital improvement plans, and operating, capital, and bond reserves.

In order to develop updated customer rates, an in-depth analysis of each cost center's revenue requirements, customer usage, capital improvement program (CIP), and additional future drivers of service costs and revenue was conducted. This report documents the methodology and assumptions used to develop the financial plan, the policy decisions reached, the proposed water and wastewater rates, and the customer bill impacts.

1.2 Marina Coast Water District Background

The Central Marina service area has a forecasted population of approximately 18,000 residents. Marina Water's current deliveries for Fiscal Year Ending (FYE) total approximately 590,000 hundred cubic feet (hcf) per year to its 4,500 customer accounts. Marina Sewer currently serves approximately 3,800 accounts totaling 7,500 equivalent dwelling units (EDUs).

In August 2005, the Central Marina and Ord Community water systems were connected; integrated operations allow water to flow between the two systems to meet peak demands and improve overall services. The amount of water exchanged between the systems is automatically monitored and recorded. In July 2007, the California Department of Public Health approved the consolidation of the water systems as Marina Coast Water District Water System.

Supply wells in Central Marina consist of three deep groundwater wells located in the 900-foot aquifer of the Salinas Valley Groundwater Basin. Water is treated at each well site for disinfection and to remove the naturally occurring hydrogen sulfide that can sometimes cause odor problems.

The Ord Community service area has a current population of approximately 20,500 residents. Ord Water's current deliveries for FYE 2017 total approximately 500,000 hundred cubic feet (hcf) per year to its 4,900 customer accounts. Ord Sewer currently serves approximately 3,900 accounts totaling 6,800 (EDUs).

Supply wells in the Ord Community are from three groundwater wells located in the lower 180-foot and 400-foot aquifers of the Salinas Valley Groundwater Basin. Groundwater from these wells is also disinfected to provide the community with healthy and safe drinking water.

1.3 Current Rates and Fees

The District last performed a cost of service water and sewer rate analysis in 2013. The 2013 report proposed five years of increases to fund capital improvements for all cost centers. The District implemented each of the recommended annual increases. Capacity fees for both water and sewer service were also last updated in 2013.

Table 1.1 and Table 1.2 summarize the existing Marina and Ord Community water and wastewater rate and fee structure, respectively. The rates consist of two parts: a fixed monthly service charge assessed on the size of the meter, and a tiered water commodity charge for all water delivered. In addition, those connected to the Ord Community Systems from July 1, 2005 through July 5, 2013, also pay a $20.00 monthly water capital surcharge per EDU and a $5.00 monthly sewer capital surcharge per EDU to help fund capital due to necessary system expansion.

Table 1.1 Marina Rates Effective January 1, 2018

Marina Water Consumption Rates (per hcf)		
Tier 1	0 to 8 hcf	$2.78
Tier 2	9 to 16 hcf	$3.19
Tier 3	17+ hcf	$5.63
Marina Water Service Charges by Meter Size		
5/8" or 3/4"		$22.36
1"		$36.07
1 1/2"		$58.94
2"		$86.36
3"		$150.41
4"		$241.82
6"		$470.42
8"		$927.88
Marina Sewer Service Charges		
Sewer Charge (per EDU)		$14.78
Marina Capacity Fees		
Water Capacity Fee (per EDU)		$4,526.00
Sewer Capacity Fee (per EDU)		$2,333.00

Table 1.2 Ord Rates Effective January 1, 2018

Ord Water Consumption Rates (per hcf)		
Tier 1	0 to 8 hcf	$3.68
Tier 2	9 to 16 hcf	$5.65
Tier 3	17+ hcf	$7.62
Ord Water Service Charges by Meter Size		
5/8" or 3/4"		$38.79
1"		$60.51
1 1/2"		$96.71
2"		$140.14
3"		$241.57
4"		$386.31
6"		$748.31
8"		$1,472.72
Ord Sewer Service Charges		
Sewer Charge (per EDU)		$32.18
Ord Capacity Fees		
Water Capacity Fee (per EDU)		$8,010.00
Sewer Capacity Fee (per EDU)		$3,322.00

1.4 Forward-Looking Statement

The projections and forecasts of this analysis are based on reasonable expectation of future events. Additionally, Carollo did not audit nor verify the accuracy of the District's customer billing or financial records used as the foundation of this analysis. Should cost escalation, operating expenditures, or capital needs vary from projected levels prior to FYE 2023, the District may require an additional Proposition 218 process to increase rates above those adopted pursuant to the current process. The District may similarly be required to begin a new Proposition 218 process should revenues not materialize as projected. The rates adopted pursuant to the Proposition 218 process are the maximum rates that the District may charge. Once the maximum rates are adopted, the District's Board of Directors has the authority to reduce rates if the Board determines that the financial condition of the District at that point in time would permit such a reduction. The Board may then later determine to increase rates to the maximum rates adopted pursuant to the current Proposition 218 process without beginning a new Proposition 218 process.

1.5 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, Rates must also fairly and appropriately allocate the costs of providing water and sewer services to customers.

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 and sewer rates, do not exceed the reasonable and proportional cost of providing the service.

The District 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.

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

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.

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

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 process presented below are advocated by the American Water Works Association (AWWA) and the Water Environment Federation (WEF) for water and sewer rate setting. Carollo has adapted this reference material and combined it with specific California rate setting requirements to reflect the District's specific water infrastructure and demands.

1.5.1 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.

1.5.1.1 Growth and Demand Analysis

Forecasting water sales and sewer usage is a critical component in the rate setting process. As part of the budget process, the District 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.

1.5.1.2 Revenue Requirement Analysis

The methodology applied to establish annual rate revenue requirements 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 American Water Works Association (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.

1.5.1.3 Functional Cost Analysis

After determining the revenue requirement, the next step in the analysis is to outline the cost drivers for both water and sewer service. 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 District and the unique and varied benefits delivered to each customer.

1.5.1.4 Rate Design & Calculation

The rate design involves developing a rate structure that proportionately recovers costs from customers from each of the District's four cost centers. The rate structure must be tailored to the customer demand 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 District 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 higher water usage 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.

1.5.1.5 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 District must provide a written notice to the affected parcels at least 45 days prior to a public hearing, at which the Board of Directors may consider 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 District's Board will be authorized to adopt the rate increases.[1]

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 District levies to proportionally recover system costs from the District's customers.

[1] Majority is 50 percent of the District's customers (parcel owners within the service area), plus one customer.

2. Growth and Demand Analysis

2.1 Introduction

Water sales are the primary source of revenues; thus, it is critical to examine and validate potential shifts in short and long-term water demands. For the purposes of understanding potential usage reductions, Carollo prepared a water demand analysis consisting of the previous forty-four months of billing data. This data along with the growth projections of the 2010 and 2015 Marina Coast Water District Urban Water Management Plan (UWMP) was reviewed to examine historical patterns and potential developing trends.

2.2 Growth and Demand Projections

Upon analysis of historical consumption and billing data, it was found that the growth predictions of the District's previous 2010 UWMP and the 2015 update might have been overly aggressive given the continued consequence of the economic downturn which slowed population growth. Also, the District's customers responded exceptionally to the recent drought state of emergency, leading to significant conservation awareness and decreases in consumption. In the practice of financial planning and rate setting for water and wastewater utilities, aggressive growth assumptions are often cause for concern. Rates and fees are developed based on the predicted number of accounts and on predicted levels of consumption, therefore, growth not materializing as expected leads to insufficient collection of revenues. These concerns were discussed with District staff, and it was agreed that the growth figures of the UWMP would not be used for the purposes of this study. Instead more conservative growth assumptions were used in order to help improve revenue stability.

The 2015 UWMP estimated an annualized growth rate of approximately 5 percent per year for the District. The growth was expected to occur primarily in the Ord Community as it is in a redevelopment stage. However, in accordance with conservative estimates, Carollo estimates 1 and 2 percent annualized growth will be used for Central Marina and Ord, respectively. As for individual customer demand, this analysis assumes that there will be no growth. This is due to the fact that the District recently experienced historical low consumption during the end years of the drought. While some bounce back has already occurred it is expected that demand will flatten out and not reach previous levels as the conservation awareness and installation of high efficiency fixtures will remain.

In FYE 2017, the District sold approximately 584,000 and 513,000 units of water to Central Marina and the Ord Community respectively. While demand is assumed to remain stagnant the account growth assumption results in estimated consumption of 622,000 hcf for Central Marina, and 578,000 hcf for Ord. Should demands or other major assumptions, significantly vary from forecasted levels, the District may need to update its financial plan and rates to adequately fund operations.

As the District charges sewer service on a per EDU basis, a similar growth rate of 1 and 2 percent will be assumed for sewer growth for Marina and Ord respectively. The results of these projections for each community can be seen in Table 2.1 and Table 2.2.

Table 2.1 Central Marina Sales Forecast

	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Water Accounts	4,587	4,632	4,678	4,725	4,772	4,820	4,868
Meter Equivalents	5,686	5,743	5,801	5,859	5,917	5,976	6,036
Consumption (hcf)	584,009	591,959	597,879	603,857	609,896	615,995	622,155
EDUs	7,456	7,530	7,605	7,681	7,758	7,836	7,914

Table 2.2 Ord Community Sales Forecast

	FYE 2017	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Water Accounts	4,919	5,017	5,118	5,220	5,324	5,431	5,540
Meter Equivalents	8,060	8,221	8,385	8,553	8,724	8,898	9,076
Consumption (hcf)	512,888	523,146	533,609	544,281	555,167	566,270	577,596
EDUs	6,764	6,899	7,037	7,178	7,322	7,468	7,617

3. Revenue Requirement Analysis

3.1 Introduction

The next step in a rate analysis is to prepare the revenue requirements for both the Ord and Marina water and sewer cost centers. This analysis has two main purposes – it serves as a means of evaluating each cost center's fiscal health and adequacy of current rate levels, and it sets the basis for near- and long-term rate planning.

The revenue requirement is derived of five components: Operations and Maintenance (O&M), Capital Improvement Expenditures; Debt Service; Policy Requirements & Bond Coverage.

There are three tests utilized to define the annual revenues necessary to provide sufficient (1) cash flow, (2) debt coverage, and (3) reserves. These sufficiency tests are commonly used to determine the amount of annual revenue that must be generated from an agency's rates.

- **Cash Flow Sufficiency Test** – The cash flow test defines the amount of annual revenues that must be generated in order to meet annual expenditure obligations of the utility as well as maintain sufficient reserves.
- **Bond Coverage Sufficiency Test** – Bond coverage refers to the collection in revenues to meet all operating expenses and debt service obligations plus an additional multiple of that debt service. MCWD has a legally required minimum bond coverage ratio of 1.25x on senior debt (2006 series bonds) and 1.10x on junior debt (2010 series bonds); however, for the purpose of prudent financial planning the bond coverage test was set to meet a 1.35x coverage ratio senior debt service and a 1.20x coverage ratio for junior debt service.
- **Reserves Test** – The reserve test ensures that each cost center has enough money in reserves in order to continue operations and CIP during unexpected revenue shortfalls according to the Districts reserve targets. This test is not legally binding and reserve targets can be reduced in some cases in order to mitigate rate payer impacts.

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

The cash flow test identifies projected cash requirements in each given year. Cash requirements include O&M expenses, debt service payments, policy-driven additions to working capital, miscellaneous capital outlays, replacement funding, and rate-funded capital expenditures. These expenses are compared to the total annual projected revenues. Shortfalls are then used to estimate needed revenue increases.

The bond-coverage test measures the ability of a utility to meet legal and policy-driven revenue obligations. Given the District's existing debt obligations, it is required to collect sufficient funds through rates to meet all ongoing O&M expenses, as well as 1.25 times (1.35x as tested) the total senior debt-service requirements, and additionally 1.10 times (1.20x as tested) the total junior debt-service requirements due in a year.

The reserve test checks to see that the District is maintaining their reserves up to their target. Marina Coast Water District has a reserve target equal to 180 days of operating expenses plus 25% of the yearly CIP budget for each cost center.

Currently, the District is legally required to meet its debt service coverage requirements through a combined coverage test in which total debt service (allocated amongst all four cost centers) is tested against the total

revenues generated by all cost centers. Carollo recommends that each cost center be responsible for generating its own proportionate share of the coverage-required revenues to improve equity amongst cost centers. Under this recommendation, each cost center's revenue requirements will be set to individually recover its apportioned debt service and coverage obligations. Simply, if debt is incurred by one of the cost centers, that same cost center is burdened with the repayment of the debt and debt coverage obligations, while the District would continue to use a combined coverage test to meet its debt service coverage requirements.

3.2 Operation & Maintenance Expenditures

For sound financial operations of the District's water and sewer systems, the revenues generated by each cost center must be sufficient to meet the expenditures or cash obligations of each cost center. The revenue needs are defined as the amount of revenues that must be recovered through water and sewer rates in order to cover annual expenditures, less any offsetting revenues. Offsetting revenues can include interest earnings and other non-operating revenues.

3.2.1 Operating Needs

Operating needs are expenditures that each cost center incurs in the day-to-day operations of its systems – e.g., employee salaries and benefits, system maintenance, fuel, and chemicals.

The District's FYE 2018 operating budget served as the basis for forecasting future operating expenses for each of the utilities. The budget was compared to prior year actual financial information to identify any anomalies or one-time expenditures not appropriate for forecasting in future years. District staff also reviewed the budget to identify costs that may need to be adjusted due to future operational changes. Unless manually calculated, future years were forecasted using escalation factors provided by District staff. These factors were assigned on a line-item basis using one of the following factors:

Table 3.1 Cost Escalation Factors

Cost Escalator	Description
Operations	Operations include all department expenses, power, and equipment. It is assumed that these costs will increase on pace with the Engineering News Record ENR long-term average inflation of 3.2%
Labor	Labor rates are assumed to increase on pace with the Engineering News Record ENR long-term average inflation of 3.2%
Construction/Capital	Capital and Construction costs are assumed to increase on pace with the ENR long-term average inflation of 3.2%

The GSA Implementation Cost Center is to fund the costs of the District's groundwater sustainability program to protect the District's vital groundwater resources. Those costs include, but are not limited to, preparation, adoption, and amendment of a groundwater sustainability plan, and investigations, inspections, compliance assistance, enforcement, and program administration.

The results of the O&M forecast for each cost center can be seen in Table 3.2 through Table 3.5.

Table 3.2 Marina Water O&M Costs

Cost Center	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Administration	$930	$959	$990	$1,022	$1,055	$1,088
O&M	1,036	1,069	1,103	1,139	1,175	1,213
Laboratory	106	110	113	117	121	124
Conservation	200	207	214	220	227	235
Engineering	448	462	477	492	508	524
GSA Implementation	-	359	688	625	1,088	1,103
Total	**$2,720**	**$3,167**	**$3,586**	**$3,615**	**$4,174**	**$4,287**

(1) All values in thousands of dollars.

Table 3.3 Marina Sewer O&M Costs

Cost Center	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Administration	$255	$264	$272	$281	$290	$299
O&M	232	240	247	255	263	272
Engineering	295	305	315	325	335	346
Total	**$783**	**$808**	**$834**	**$860**	**$888**	**$916**

(1) All values in thousands of dollars.

Table 3.4 Ord Water O&M Costs

Cost Center	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Administration	$2,494	$2,574	$2,656	$2,741	$2,829	$2,341
O&M	1,745	1,800	1,858	1,918	1,979	2,042
Laboratory	232	239	247	255	263	271
Conservation	279	288	297	307	316	327
Engineering	1,346	1,389	1,433	1,479	1,527	1,575
GSA Implementation	0	586	883	710	1,136	1,149
Total	**$6,095**	**$6,876**	**$7,374**	**$7,409**	**$8,049**	**$7,705**

(1) All values in thousands of dollars.

Table 3.5 Ord Sewer O&M Costs

Cost Center	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Administration	$682	$704	$727	$750	$774	$799
O&M	622	642	663	684	706	728
Engineering	252	260	269	277	286	295
Total	**$1,557**	**$1,607**	**$1,658**	**$1,711**	**$1,766**	**$1,822**

(1) All values in thousands of dollars.

3.3 Capital Improvement Plan

The District's capital improvement plan (CIP) includes a variety of capital projects that involve repairing (or replacing) existing assets and/or expanding system capacity to accommodate growth. However, this report only includes the Existing User Funded projects as the expansion projects are funded directly through capacity fees and are outside the scope of this report. Carollo worked with the District to identify and prioritize projects over the course of the study in order to mitigate the effects on rate payers as much as possible while still ensuring an appropriate and efficient capital improvement plan. A summary of each cost center's CIP budget is shown in Table 3.6.

A large portion of the District's CIP includes the investment in a district wide Recycled Water Program. In order to fund the significant expense brought on by the Recycled Water Program, a State Revolving Fund (SRF) loan will be taken out. For the purpose of this analysis it is assumed that this loan will be paid back by both water cost centers in proportion to their consumption. The total Recycled Water amount in Table 3.6 takes into account a SRF grant and a Fort Ord Reuse Authority capital contribution. Should the District receive any additional funding sources, this could mitigate the need for additional future revenue increases.

Table 3.6 Capital Improvement Budget by Cost Center

Cost Center	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Marina Water	$652	$758	$505	$702	$317
Marina Sewer	27	835	474	1,248	293
Ord Water	2,449	1,776	699	1,868	854
Ord Sewer	2,210	2,952	1,117	393	558
Recycled Water	16,752	7,078	-	-	-
Total	**$22,091**	**$13,399**	**$2,795**	**$4,212**	**$2,022**

(1) All values in thousands of dollars, escalated.

3.4 Debt Service

For simpler administration and ability to meet legal requirements the District holds all debt and then allocates repayment to the cost centers proportional to use of the debt. The District's existing debt service payments are established in the District's debt repayment schedule and allocated equitably. In addition to the existing debt, the District has plans to take out two more loans. The first loan is necessary to fund CIP projects for Ord Water and Ord Sewer. The second loan is for the payment of Regional Urban Water

Augmentation Project (RUWAP). It is expected that this loan will be paid back through both water cost centers. The expected future debt payments for each cost center can be seen in Table 3.7

Table 3.7 Debt Service Schedule

Cost Center	FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Marina Water	$632	$630	$616	$439	$439	$439
Marina Sewer	162	162	158	112	113	112
Ord Water	1,556	1,712	1,794	1,357	1,482	1,480
Ord Sewer	519	662	812	707	707	707
Total	**$2,868**	**$3,166**	**$3,381**	**$2,615**	**$2,741**	**$2,738**

(1) All values in thousands of dollars.

3.5 Reserve Policy

In addition to the operating and capital expenses, discussed above, there are also expenses resulting from policy decisions. Under current policy, the District has established an operating and capital reserves fund for each cost center. Although the District does have other debt service-related reserves, Carollo's analysis focuses on the District's "unrestricted" reserves because these other reserves are not available to support day-to-day operations.

The revenue requirements analysis targets a minimum operating reserve fund balance equivalent to 180 days of operating expenses for each cost center as required by District policy.

In addition to the operating reserve, the District also targets to maintain a minimum CIP reserve target of 25 percent of the forecasted 5-year annual CIP average. This reserve would support the day-to-day expenses related to capital projects and provides that CIP won't be hindered or impacted by lulls in cash flows. These targets are in-line with industry standards and Carollo does not recommend a change at this time.

As existing Ord Water and Ord Sewer are below the minimum operating reserve target, it is recommended that the District continue to closely monitor revenues and reserve levels. Currently the District's reserves are being supported solely by the Marina Water and Sewer Cost Centers. During the analysis, Carollo explored and presented multiple financial scenarios exploring the effects of various capital funding and rates scenarios and the impacts on reserves. Based on input, the Board recommended that each cost center's reserve target should ultimately be fully funded.

3.6 Recommended Revenue Requirements

Over the course of developing the proposed revenue requirements, multiple rate revenue forecasts were developed to explore the feasibility of funding options for future capital needs to mitigate ratepayer impacts. The extent of the proposed revenue adjustments is largely contingent on the funding and timing of capital projects.

In addition to capital funding, financial scenarios were reviewed to evaluate the sensitivity and impact of conservation in relation to increasing water costs. Given the District's revenue susceptibility to future water demand, the analysis assumed flat per customer annual water demands, yet moderate customer growth and inflationary cost escalators.

The following tables in this report identify each cost center's cash position, assuming no rate adjustments are adopted. As demonstrated by the analysis, the District's cash flow is forecasted to be negative in the existing and future years.

3.6.1 Debt Coverage Test

Revenue increases are driven by the greatest need identified between the cash flow, debt coverage, and reserve tests. Despite having a cash flow and reserve test for each cost center, the District's debt covenant is District-wide and requires a debt coverage ratio greater than 1.25. As Table 3.8 shows, prior to revenue increases the District is expected to meet all debt coverage requirements. Thus all revenue increases will be driven by cash flow and reserve needs.

Table 3.8 MCWD Debt Coverage Test

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Total Revenues	**$15,985**	**$17,064**	**$18,038**	**$18,928**	**$19,868**
Expenditures					
Operating Expenditures	$7,651	$8,588	$9,169	$8,766	$9,531
Debt Service	2,798	3,167	3,384	2,661	2,741
RUWAP Debt Service	-	-	-	775	1,871
25% Coverage Requirement	700	792	846	859	1,153
Total Expenses	**$11,149**	**$12,547**	**$13,399**	**$13,062**	**$15,295**
Bond Coverage Surplus/(Deficit)	**$3,013**	**$3,439**	**$3,665**	**$4,976**	**$3,633**

(1) All values in thousands of dollars.

3.6.2 Cash Flow Tests

3.6.2.1 Marina Water

Based on existing rates, Marina Water is forecasted to have a negative cash flow and erode reserves on hand for all five years as seen in Table 3.9. While existing operating reserves can cover the current shortfall, it is unsustainable without revenue increases.

Table 3.9 Marina Water Revenue Requirement – Pre Increases

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenues					
Water Sales	$3,841	$3,885	$3,926	$3,969	$4,014
Fire System Charge	88	92	97	102	107
Other Revenues	178	178	178	178	178
Operating Revenues	$4,107	$4,152	$4,194	$4,238	$4,283
Expenses					
Operating Expenses	$3,167	$3,586	$3,615	$4,174	$4,287
Debt Service	630	616	439	439	439
Rate Funded Capital	652	758	255	-	317
Total Expenses	**$4,449**	**$4,960**	**$4,308**	**$4,613**	**$5,042**
Cash Flows	$(342)	$(807)	$(114)	$(375)	$(759)
Operating Reserve	$1,867	$971	$767	$301	($549)
Capital Reserve	$1,332	$1,338	$1,095	$350	$352

(1) All values in thousands of dollars.

In order to return to a positive cash flow, annual 4 percent increases are proposed. With these inflationary level increases, Marina Water is still forecasted to have a negative cash flow in FYE 2019 and FYE 2020, but in subsequent years it then begins to reach a positive cash flow by FYE 2021. This is due to funding capital projects with rates revenues of $652K and $757K, respectively. The two-year shortfall is covered from Marina Water's existing reserve balance. The results of the revenue increases are summarized below.

Table 3.10 Marina Water Revenue Increase Summary

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenue Increase	4%	4%	4%	4%	4%
Water Sales	$3,991	$4,192	$4,404	$4,626	$4,857
Resulting Cash Flow	**(357)**	**(671)**	**188**	**101**	**(102)**
Operating Reserve	$1,939	$1,268	$1,457	$1,557	$1,456
Capital Reserve	$1,332	$1,338	$1,095	$350	$352

(1) All values in thousands of dollars.

3.6.2.2 Marina Sewer

Based on existing rates, Marina Sewer is forecasted to have a positive cash flow for four of the next five years as seen in Table 3.11. However, it should be noted this is only possible through the use of reserves to fund some CIP projects. And even then, there is still a significant rate funded capital expense in FYE 2022 which must be funded.

Table 3.11 Marina Sewer Revenue Requirement – Pre Increases

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenues					
Sewer Sales	$1,349	$1,362	$1,376	$1,390	$1,404
Fire System Charge	48	48	48	48	48
Other Revenues	$1,397	$1,411	$1,424	$1,438	$1,452
Operating Revenues					
Expenses	$808	$834	$860	$888	$916
Operating Expenses	162	162	158	112	113
Debt Service	27	-	-	1,248	293
Rate Funded Capital	**$997**	**$995**	**$1,018**	**$2,248**	**$1,322**
Total Expenses	**$400**	**$415**	**$406**	**$(810)**	**$130**
Cash Flows	$1,000	$1,000	$1,406	$596	$726
Operating Reserve	$1,184	$755	$259	$260	$261
Capital Reserve	$1,349	$1,362	$1,376	$1,390	$1,404

(1) All values in thousands of dollars.

In order to maintain reserves as well as prepare for significant CIP expenses identified for FYE 2022, annual revenue increases of 4 percent are proposed. These inflationary increases would allow Marina Sewer to fund all necessary expenses and maintain targeted reserve levels in all years. A summary of these increases is shown below.

Table 3.12 Marina Sewer Revenue Increase Summary

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenue Increase	4%	4%	4%	4%	4%
Sewer Sales	$1,403	$1,474	$1,548	$1,626	$1,708
Resulting Cash Flow	**426**	**497**	**546**	**(607)**	**399**
Operating Reserve	$1,000	$1,000	$1,546	$939	$1,029
Capital Reserve	$1,209	$862	$366	$368	$679

(1) All values in thousands of dollars.

3.6.2.3 Ord Water

Based on existing rates and the assumed growth, Ord Water is forecasted to have a negative cash flow for all five years as seen in Table 3.13. As Ord Water has relatively low reserves to begin with, immediate and higher revenue increases are necessary.

Table 3.13 Ord Water Revenue Requirement – Pre Increases

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenues					
Water Sales	$6,246	$6,373	$6,502	$6,635	$6,769
Fire System Charge	166	169	173	176	180
Other Revenues	1,361	1,361	1,361	1,361	1,361
Total Revenues	**$7,772**	**$7,903**	**$8,035**	**$8,172**	**$8,310**
Expenses					
Operating Expenses	$6,876	$7,374	$7,409	$8,049	$7,705
Debt Service	1,712	1,794	1,357	1,482	1,480
Rate Funded Capital	-	-	699	-	854
Total Expenses	**$8,588**	**$9,169**	**$9,465**	**$9,531**	**$10,039**
Cash Flows	**$(816)**	**$(1,266)**	**$(1,430)**	**$(1,359)**	**$(1,730)**
Operating Reserve	*$975*	*$420*	*($284)*	*($903)*	*($1,877)*
Capital Reserve	*$193*	*$194*	*$195*	*$195*	*$196*

(1) All values in thousands of dollars.

In order to maintain necessary revenue to continue operation as well as maintain proper reserves Carollo proposes increases of 8 percent in FYE 2019, 6 percent in FYE 2020, and 4 percent for all subsequent years covered by this increase. This more aggressive revenue increase compared with the other cost centers is simply due to the greater costs carried to support the Ord Water system, as well as to fund the growing capital and debt service needs allocated to this cost center.

Table 3.14 Ord Water Revenue Increase Summary

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenue Increase	8%	6%	4%	4%	4%
Water Sales	$6,732	$7,271	$7,706	$8,170	$8,661
Resulting Cash Flow	$(580)	$(561)	$(350)	$51	$38
Operating Reserve	$1,211	$1,361	$1,737	$2,528	$3,321
Capital Reserve	$193	$194	$195	$195	$196

(1) All values in thousands of dollars.

It should be noted that despite a negative cash flow reserves are still growing. This is due to the forecasted year-end reserve transfers from Ord Water Capital Fund, whereby a portion of capacity fees collected

throughout the year are used to reimburse the Ord Water's existing users. However, should these new connections not materialize, the District may need to limit its CIP or borrow funds from other cost centers.

3.6.2.4 Ord Sewer

Due to an original lack of funding for CIP projects Ord Sewer is expected to fund capital improvements with bond proceeds. With the assumption of these debt issuances, Ord Sewer is expected to see positive cash flow and reserves without revenue increases. This is presented in Table 3.15.

Table 3.15 Ord Sewer Revenue Requirement – Pre Increases

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenues					
Sewer Sales	$2,718	$2,774	$2,829	$2,886	$2,943
Other Revenues	245	245	245	245	245
Total Revenues	**$2,963**	**$3,019**	**$3,074**	**$3,131**	**$3,188**
Expenses					
Operating Expenses	$1,607	$1,658	$1,711	$1,766	$1,822
Debt	662	812	707	707	707
Rate Funded Capital	-	500	500	393	558
Total Expenses	**$2,269**	**$2,970**	**$2,918**	**$2,866**	**$3,087**
Cash Flows	**$694**	**$49**	**$156**	**$264**	**$102**
Operating Reserve	$1,201	$1,250	$1,406	$1,670	$1,772
Capital Reserve	-	-	-	-	-

(1) All values in thousands of dollars.

It is a goal of Ord Sewer to build a capital reserve as well as reduce the need for future debt issues. As such, Carollo recommends revenue increases of 5 percent in FYE 2019 and 3 percent in the subsequent years covered by this increase. The results of these increases can be seen below. Should the timing of these capital projects be delayed, it may be possible for the District to limit the amount of forecasted debt.

Table 3.16 Ord Sewer Revenue Increase Summary

	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Revenue Increase	5%	3%	3%	3%	3%
Sewer Sales	$2,853	$2,999	$3,154	$3,314	$3,484
Cash Flow	$758	$228	$432	$641	$588
Operating Reserve	$1,265	$1,493	$1,925	$2,473	$2,529
Capital Reserve	-	-	-	$93	$626

(1) All values in thousands of dollars.

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 Marina and Ord water and sewer services to each customer in proportion to the demands the customer places on each respective system. By the end of the cost of service analysis, each customer is allocated a fair and reasonable share of the costs incurred to provide service to the customer's property. Detailed cost allocations allow the rate structure to balance ratepayer equity with the District's fiscal and policy goals. This analysis yields an appropriate method for allocating costs, which could be sustained indefinitely barring substantial changes in cost drivers or customer consumption patterns.

4.1 Water Cost of Service Analysis

In California, water rates must adhere to the cost of service requirements imposed by Proposition 218 and the State Constitution. Proposition 218 requires that property-related fees and charges, including water and sewer rates, do not exceed the reasonable and proportional cost of providing the service. This is the fundamental basis of water rate-setting, and it is achieved primarily through the cost allocation process.

However, industry guidance and best practices can still serve as a starting point for the analysis, which can then be shaped to meet the needs of state regulation. The cost of service allocation completed in this study is established on the base-extra capacity method as defined by the American Water Works Association. Under the base-extra capacity method, revenue requirements are allocated based on the demand placed on the water system.

4.1.1 Water Functional Cost Categories

The functional allocation assigns the annual revenue requirement for a select test year by major function. The water utility's primary functions are related to base flow, peak flow, and customer costs (customer and services). These functional cost pools include the rate paid for water supplied by outside agencies, the system's existing O&M expenditures, debt service, and rate-funded capital costs.

The District's budget was analyzed line-item by line-item and expenditures were distributed between the available functions:

Base: Operating and capital costs incurred by the water system to provide a basic level of service to each customer.

Peak: Operating costs incurred to meet peak demands for water in excess of basic demand (base). This cost also includes capital costs needed to provide the required system over-sizing to meet peak demand, as well as basic water supply and distribution costs.

Customer: 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 and are reasonably uniform across the different customer classes.

Capacity: Meter and capacity related costs, such as meter maintenance and peaking charges, that are included based on the meters hydraulic capacity (measured in gallons per minute). Additionally, as the system's facilities are designed to meet peaking requirements, a portion of the capacity-related costs, including debt service, are allocated to Capacity.

4.1.2 Functional Cost Factors

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

"System Peaking" and "Capacity / Peaking" cost allocations were calculated uniquely for both cost centers based on their particular system's usage patterns. For example, "Ord System Peaking" attributes a higher portion of costs to "Peak" than "Marina System Peaking" because a higher proportion of Ord System consumption is in excess of basic demand.

Table 4.1 Allocation Factors

Allocation Basis	Purpose	Customer	Capacity	Base	Peak
Customer Only	Costs that are common to all accounts	100%			
Capacity Only	Costs that vary based on demand or engineering metrics		100%		
Base Only	Water costs that are common across all units of demand			100%	
Ord Peak Only	Water costs that increase based on peak or demand				100%
Marina Peak Only	Water costs that increase based on peak or demand				100%
Ord System Peaking	Costs that are common to Base/Peak, but allocated based on system use			41%	59%
Marina System Peaking	Costs that are common to Base/Peak, but allocated based on system use			44%	56%
Ord Capacity / Peaking	Capital costs that are split between the fixed charge and R&R charge		25%	31%	44%
Marina Capacity / Peaking	Capital costs that are split between the fixed charge and R&R charge		25%	33%	42%

4.1.3 Allocation to Functional Components

The result of Marina Water's functional allocation is presented in Table 4.2 and Figure 4.1. The Customer and Capacity components collectively represent approximately 38 percent of Marina Water's costs and will generate the fixed charge. The remaining 62 percent of costs are allocated to the Base and Peak components and are the basis for the variable rates. A line-by-line breakdown of the allocation can be found in the Appendix.

Table 4.2 Marina Allocation Results

Category	Allocation Percentage	FYE 2019 Costs (1)
Base	24.4%	$975
Peak	37.2%	1,485
Customer	16.3%	649
Capacity	22.1%	882

(1) All values in thousands of dollars.

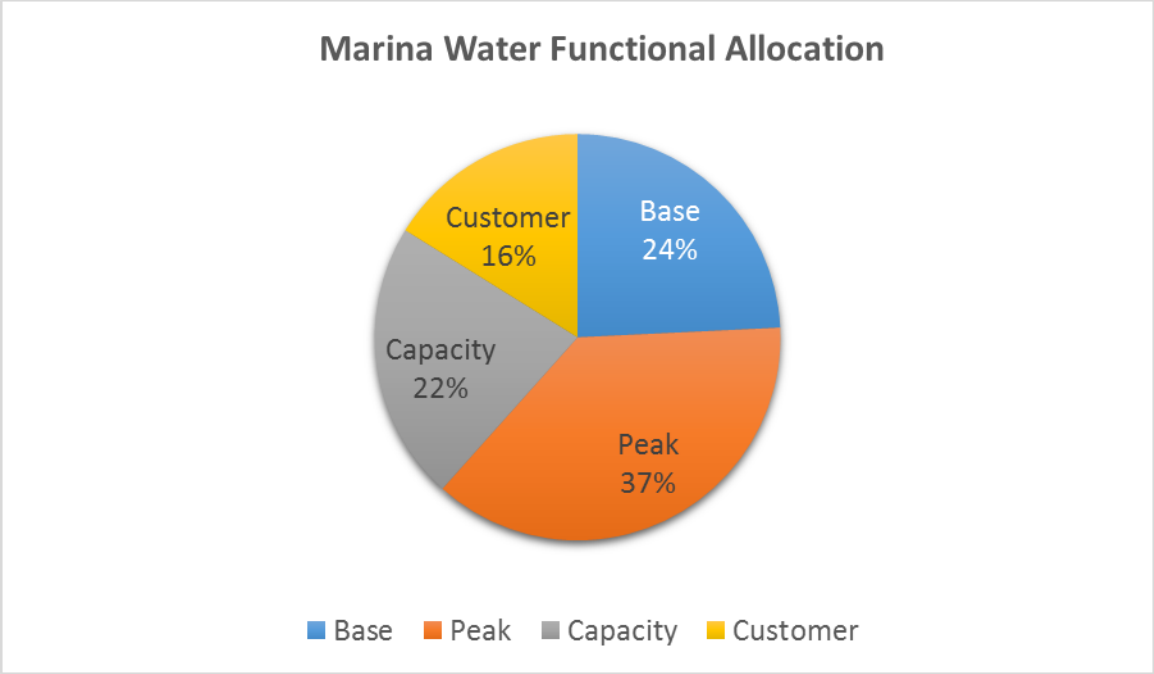

Figure 4.1 Marina Water Functional Allocation

The result of Ord Water's functional allocation is presented in Table 4.3 and Figure 4.2. The Customer and Capacity components collectively represent approximately 52 percent of Ord Water's costs and will generate the fixed charge. The remaining 48 percent of costs are allocated to the Base and Peak components, and are the basis for the variable rates. Relative to Marina, Ord's higher allocation to Capacity is due to higher utilization of debt (a fixed expense) and other fixed costs, such as the FORA franchise and administration fee.

A line-by-line breakdown of the allocation can be found in the Appendix.

Table 4.3 Ord Allocation Results

Category	Allocation Percentage	FYE 2019 Costs (1)
Base	20.0%	$1,346
Peak	27.8%	1,875
Customer	14.8%	993
Capacity	37.4%	2,518

(1) All values in thousands of dollars.

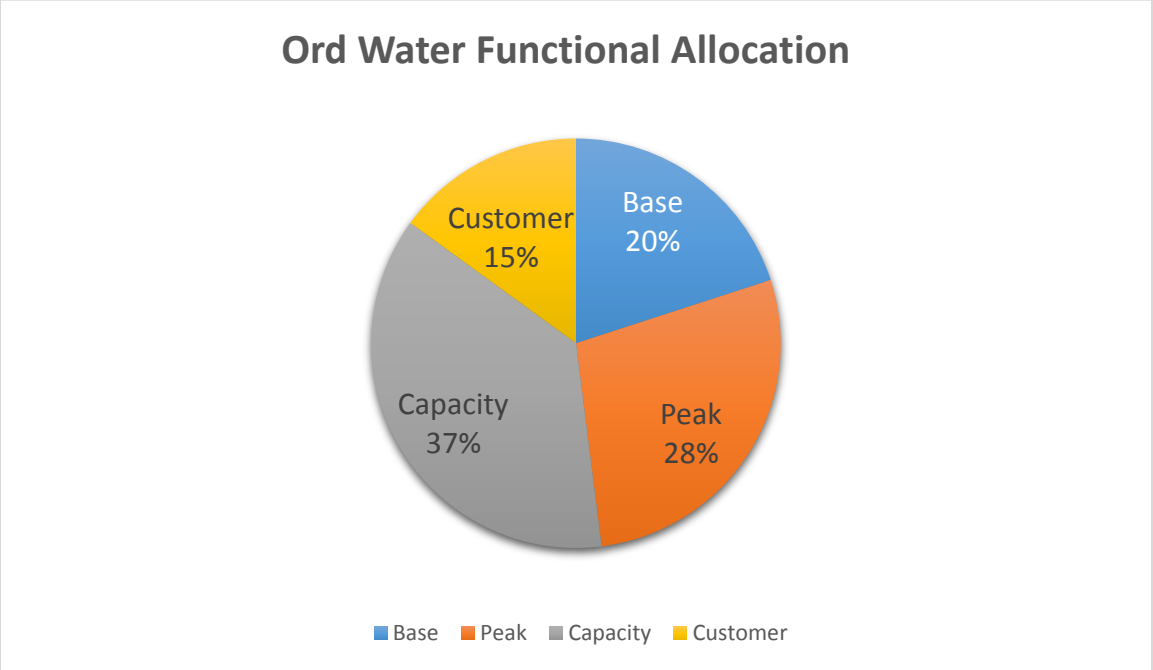

Figure 4.2 Ord Water Functional Allocation

4.2 Sewer Cost Allocation

The cost of service process for development of sewer rates follows an approach similar to that used for water service. However, as the Marina Sewer and Ord Sewer operations are responsible solely for the collection and conveyance of wastewater and not treatment, a much simpler method of rate design can be used. Currently each sewer customer is assigned a number of EDUs based on assumed flow and strength, which standardizes each customer's sewer usage. As such, it is only necessary to divide the revenue requirement by twelve times the number of forecasted EDUs in order to establish a monthly rate.

Table 4.4 Marina Sewer Cost per EDU Calculation

Fiscal Year	Revenue Required (1)	Projected EDUs	Monthly Rate per EDU
FYE 2019	$1,403	7,605	$15.37
FYE 2020	1,474	7,681	$15.99
FYE 2021	1,548	7,758	$16.63
FYE 2022	1,626	7,836	$17.29
FYE 2023	1,708	7,914	$17.98

(1) All values in thousands of dollars.

Table 4.5 Ord Sewer Cost per EDU Calculation

Fiscal Year	Revenue Required (1)	Projected EDUs	Monthly Rate per EDU
FYE 2019	$2,853	7,037	$33.80
FYE 2020	2,999	7,178	$34.85
FYE 2021	3,154	7,322	$35.90
FYE 2022	3,314	7,468	$37.00
FYE 2023	3,484	7,617	$38.15

(1) All values in thousands of dollars.

5. Rate Design Analysis

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

5.1 Existing Rate Structures

The District 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 that all customers pay for the cost of providing safe and reliable water services.

The existing rate structure includes three rate components:

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

The variable rate is charged through the application of a three-tier structure. The tiers are designed to equitably recover both base and peak costs. The following sections summarize the recommendations for specific rates, charges, and classes.

5.2 Water Recommendations

Given the numerous and often competing elements of rate design, selecting 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 carries weight, and plays an important role when implementing changes and evaluating the overall effectiveness of proposed changes. These elements 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 customer. The proposed rate structure refines the District's existing structures to incorporate District staff, Board, 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 revenue increase for each cost center as shown in Table 5.1.

Table 5.1 Proposed Revenue Increases

Service	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Marina Water	4%	4%	4%	4%	4%
Marina Sewer	4%	4%	4%	4%	4%
Ord Water	8%	6%	4%	4%	4%
Ord Sewer	5%	3%	3%	3%	3%

5.2.1 Fixed Charge

A monthly fixed charge is a cost recovery mechanism that is generally included in the rate structure to assist in recovery of fixed expenditures. In this analysis, these costs are largely but not entirely allocated to the Customer and Capacity components. For most water and sewer agencies, the majority of costs—typically in excess of 60 or 70 percent—can be considered fixed in nature. It would be challenging for a number of reasons to collect fixed revenues matching that percentage, and so most utilities do not perfectly match fixed revenues with fixed expenses.

While an increased fixed charge provides a stable source of revenues for the utility, increasing the fixed charge reduces the commodity rates and incentive for conservation. The proposed revenue adjustments as a percentage do not equal or necessarily correlate to an equivalent percentage increase to rates or monthly bills. The results of the updated cost of service analysis will affect users differently based on their meter size and water consumption.

The first part of the fixed charge is derived from the costs allocated to Customers. In order to define this rate, the total cost allocated to Customers was divided by the number of monthly bills forecasted for FYE 2019. Using the values from Table 2.1 and Table 2.2 this cost was calculated individually for each cost center.

The second part of the fixed charge is derived from the costs allocated to Capacity. The Capacity costs are split through the use of the Meter Equivalent Unit (MEU). The MEU is an industry-wide standard calculated by the AWWA which is used to compare the capacity of different sized meters. A rate per MEU is then defined by dividing the allocated Capacity costs by the total number of MEUs.

Both the Customer unit cost and the rate per MEU were calculated for each cost center using the forecasted account and MEU assumptions from Table 2.1 and Table 2.2. The fixed charge is then defined for each meter size by multiplying the rate per MEU by its respective capacity ratio and adding the Customer unit cost.

There is a small segment of the Ord community that is currently charged on a flat rate system, where their usage is not metered, and a flat fee for service is paid to the District each month. The District is phasing this fee out over the next several years. Table 5.5 below outlines the proposed monthly fee for these customers over the next several years. The fee is calculated as a combination of the 3/4" monthly fixed service charge, combined with an estimated variable portion of the bill (20 hcf, multiplied by the commodity rates discussed further in this report). This is intended to provide a reasonable basis for estimating the usage of these customers, while not possessing meter data.

Table 5.2 Marina Water FYE 2019 Fixed Charge

Meter Size	Meter Capacity Ratio	Meter Cost	Customer Unit Cost	Total
5/8" or 3/4"	1.0	$12.68	$11.56	$24.24
1"	1.67	$21.13	$11.56	$32.69
1 1/2"	3.33	$42.24	$11.56	$53.80
2"	5.33	$67.58	$11.56	$79.14
3"	10.67	$135.16	$11.56	$146.72
4"	16.67	$211.18	$11.56	$222.74
6"	33.33	$422.35	$11.56	$433.91
8"	66.67	$844.69	$11.56	$856.25

Table 5.3 Marina Water Fixed Charge Projection

Meter Size	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
5/8" or 3/4"	$22.36	$24.24	$25.21	$26.22	$27.26	$28.34
1"	$36.07	$32.69	$33.99	$35.35	$36.77	$38.22
1 1/2"	$58.94	$53.80	$55.95	$58.19	$60.52	$62.91
2"	$86.36	$79.14	$82.30	$85.60	$89.02	$92.55
3"	$150.41	$146.72	$152.57	$158.69	$165.03	$171.56
4"	$241.82	$222.74	$231.62	$240.92	$250.55	$260.46
6"	$470.42	$433.91	$451.22	$469.33	$488.08	$507.39
8"	$927.88	$856.25	$890.40	$926.15	$963.15	$1,001.26

Table 5.4 Ord Water FYE 2019 Fixed Charge

Meter Size	Meter Capacity Ratio	Service Unit Cost	Customer Unit Cost	Total
5/8" or 3/4"	1.0	$25.03	$16.17	$41.20
1"	1.67	$41.71	$16.17	$57.88
1 1/2"	3.33	$83.40	$16.17	$99.57
2"	5.33	$133.44	$16.17	$149.61
3"	10.67	$266.88	$16.17	$283.05
4"	16.67	$416.99	$16.17	$433.16
6"	33.33	$833.98	$16.17	$850.15
8"	66.67	$1,667.95	$16.17	$1,684.12

Table 5.5 Ord Water Fixed Charge Projection

Meter Size	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
5/8" or 3/4"	$38.79	$41.20	$43.62	$45.32	$47.09	$48.94
1"	$60.51	$57.88	$61.28	$63.68	$66.16	$68.76
1 1/2"	$96.71	$99.57	$105.43	$109.55	$113.82	$118.29
2"	$140.14	$149.61	$158.41	$164.61	$171.02	$177.74
3"	$241.57	$283.05	$299.68	$311.42	$323.55	$336.26
4"	$386.31	$433.16	$458.62	$476.58	$495.14	$514.60
6"	$748.31	$850.15	$900.12	$935.37	$971.80	$1,009.98
8"	$1,472.72	$1,684.12	$1,783.11	$1,852.94	$1,925.11	$2,000.75
Flat Rate	$153.99	$162.95	$172.75	$179.70	$186.90	$194.40

5.2.2 Commodity Rates

The District's existing rate structure is comprised of three inclining block tiers. The existing tiers are for usage 0-8 hcf, 9-16 hcf, and greater than 16 hcf. Although Marina and Ord have different rates, they share the same tier structure. Through a comprehensive evaluation of consumption and billing data, it was revealed that only 12% of all usage from both communities occurs within Tier 2. The proportion of water sold by tier can be seen in Figure 6.1. This indicates that a three-tier structure might not be necessary.

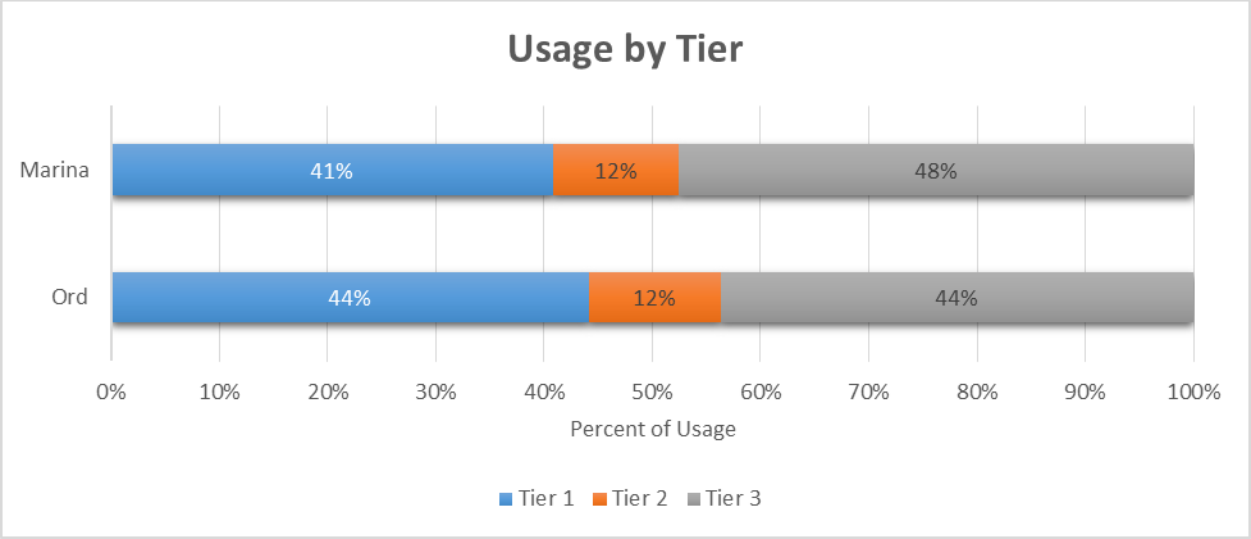

Figure 6.1 Water Consumption by Tier

In order to further refine the nexus between cost of service and rates, a two-tier commodity rate structure is proposed. This allows for a closer nexus between the tiers and base and peak allocations. Based on analysis of customer consumption the tier break point for both service areas was shifted to 10 hcf to reflect the system average.

The District's tiered rate structure is built upon the idea that greater usage results in increasing costs for the District, unique from the costs incurred for basic (i.e., average) service. This greater usage can be

consistently higher demand levels throughout the day, month, or year, or it can be irregular, causing "peaks" on the system. Regardless of when this demand occurs, the District must have sufficient capacity to serve the highest demand day of the year. For most utilities, these peaks occur generally around the same time, typically around the hotter summer months, and around the shoulders of business hours when people are beginning and ending their days. That cumulative impact of all the District's users placing their greatest demand on the system at the same moment greatly amplifies the needed capacity to serve all of these users, often on the order of 50 to 100 percent of an average month's demand in the case of summer months.

Additionally, tiered rates directly incentivize conservation by sending a price signal to customers. If they use more water, they will have to pay a higher unit price. As users increase their demand, the District must continue to produce more water at an increased cost compared with base demand and size, operate, and maintain larger facilities to meet the higher demand.

Built on the foundation of the base-extra capacity methodology outlined in the American Water Works Association's "Principles of Water Rates, Fees, and Charges: Manual of Water Supply Practices M1," these additional costs are covered through the District's tiered rate system. Every unit of water begins with a base unit cost intended to recover the District's basic production, conveyance, and distribution costs. The concept of proportionality requires that cost allocations consider both the average quantity of water consumed (base) and the peak rate at which it is consumed (peaking).

In order to establish an equitable rate for each tier, a common base rate and unique peak rates were developed. In order to develop the peak rates, peaking factors were identified through the analysis of usage patterns. These peaking factors were then used to allocate the peak costs identified in the functional allocation to each tier.

5.2.2.1 Base Rate

Each tier is first developed by calculating the base rate for each unit of water. This base rate is identical for each tier. The calculations are outlined below.

Table 5.6 Marina Water Base Rate Calculation

Calculation	Value
Allocated Base Costs (thousands)	$975
Projected FYE 2019 Usage (hcf)	597,879
Base Rate ($/hcf)	$1.63

Table 5.7 Ord Water Base Rate Calculation

Calculation	Value
Allocated Base Costs (thousands)	$1,345
Projected FYE 2019 Usage (hcf)	533,609
Base Rate ($/hcf)	$2.53

5.2.2.2 Peak Rate Calculation

After the base rate is calculated, the peak rate is calculated for each tier based on the peaking factors associated with each tier.

Table 5.8 Marina Water Peak Rate Calculation

Calculation	Tier 1	Tier 2
Total allocated peak costs from Table 4.2 ($000s)	$1,485	
Peak factor calculation method	Min Month / Avg. Month	Max Month / Avg. Month
Peak factor	0.65	1.33
Projected demand (hcf)	292,094	305,784
Weighted demand *(hcf * peak factor)*	188,416	405,670
Unit cost per peak unit *(Total allocated peak costs / sum of weighted demand)*	$2.50	
Peak Rate *(Unit cost per peak unit x peak factor)*	$1.62	$3.32

Table 5.9 Ord Water Peak Rate Calculation

Calculation	Tier 1	Tier 2
Total allocated peak costs from Table 4.3 ($000s)	$1,874	
Peak factor calculation method	Min Month / Avg. Month	Max Month / Avg. Month
Peak factor	0.52	1.80
Projected demand (hcf)	272,981	260,628
Weighted demand *(hcf * peak factor)*	142,843	469,556
Unit cost per peak unit *(Allocated costs / sum of weighted demand)*	$3.06	
Peak Rate *(Unit cost per peak unit x peak factor)*	$1.60	$5.51

5.2.2.3 Tiered Rates

The tiered rates are calculated by adding the base costs to each tiers peak rate. The escalated tiered rates for FYE 2019 – FYE 2023 can be seen in Table 5.10 and Table 5.11.

Table 5.10 Marina Water Tiered Rates

Year	Tier 1	Tier 2
FYE 2019	$3.25	$4.95
FYE 2020	$3.38	$5.15
FYE 2021	$3.51	$5.36
FYE 2022	$3.65	$5.57
FYE 2023	$3.80	$5.79

Table 5.11 Ord Water Tiered Rates

Year	Tier 1	Tier 2
FYE 2019	$4.13	$8.04
FYE 2020	$4.37	$8.51
FYE 2021	$4.54	$8.84
FYE 2022	$4.72	$9.19
FYE 2023	$4.90	$9.55

5.3 Fire Meter Rate

The fire meter rate is used to cover the costs attributed with fire protection. The District does not measure or charge for the water consumed by a fire meter. Instead a standby fee is charged for the availability of this water when needed in an emergency. The projected rates can be seen below:

Table 5.12 Marina Fire Meter Rates

Meter Size	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
1"	$1.68	$1.73	$1.80	$1.87	$1.94	$2.02
1 1/2"	$4.87	$5.02	$5.22	$5.43	$5.65	$5.87
2"	$10.37	$10.70	$11.13	$11.57	$12.04	$12.52
2 1/2"	$18.65	$19.25	$20.01	$20.82	$21.65	$22.51
3"	$30.13	$31.09	$32.33	$33.62	$34.97	$36.37
4"	$64.20	$66.25	$68.90	$71.65	$74.52	$77.50
6"	$186.49	$192.43	$200.13	$208.13	$216.46	$225.12
8"	$397.40	$410.08	$426.48	$443.54	$461.28	$479.73

Table 5.13 Ord Fire Meter Rates

Meter Size	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
1"	$2.26	$2.44	$2.58	$2.69	$2.79	$2.90
1 1/2"	$6.56	$7.08	$7.51	$7.81	$8.12	$8.45
2"	$13.99	$15.11	$16.02	$16.66	$17.32	$18.02
2 1/2"	$25.15	$27.16	$28.79	$29.94	$31.14	$32.39
3"	$40.63	$43.88	$46.51	$48.37	$50.31	$52.32
4"	$86.58	$93.51	$99.12	$103.08	$107.20	$111.49
6"	$251.49	$271.61	$287.91	$299.42	$311.40	$323.85
8"	$535.94	$578.82	$613.54	$638.09	$663.61	$690.15

5.4 Temporary Water Service Charges

Temporary Water Service Charges exist to cover the labor associated with services offered by the district. These fees were escalated in accordance with forecasted labor inflation. The rates can be seen below:

Table 5.14 Marina Temporary Water Service Charges

Fee	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Meter Deposit Fee	$650.00	$702.00	$745.00	$775.00	$806.00	$839.00
Hydrant Meter Fee (Set / Remove Fee)	$140.00	$152.00	$162.00	$169.00	$176.00	$184.00
Hydrant meter Fee (Relocate Fee)	$140.00	$152.00	$162.00	$169.00	$176.00	$184.00
Minimum Monthly Service Charge	$151.56	$163.70	$173.55	$180.50	$187.75	$195.30
Estimated Water Consumption Deposit	$1,100.00	$1,188.00	$1,260.00	$1,311.00	$1,364.00	$1,419.00

Table 5.15 Ord Temporary Water Service Charges

Fee	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Meter Deposit Fee	$650.00	$676.00	$704.00	$733.00	$763.00	$794.00
Hydrant Meter Fee (Set / Remove Fee)	$140.00	$146.00	$152.00	$159.00	$166.00	$173.00
Hydrant meter Fee (Relocate Fee)	$140.00	$146.00	$152.00	$159.00	$166.00	$173.00
Minimum Monthly Service Charge	$98.29	$102.25	$106.35	$110.65	$115.10	$119.75
Estimated Water Consumption Deposit	$1,100.00	$1,144.00	$1,190.00	$1,238.00	$1,288.00	$1,340.00

5.5 Demand Management Rates

Demand rates are temporary surcharges that can be implemented in time of need to safeguard cost recovery. At the discretion of the District Board, the District may introduce demand rates in concert with the proposed 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 the two. If baseline demands are not realized, decreasing demands drive the need for additional rate increases in the short-term. The District's current rate structure recovers between 46 and 62 percent of annual expenditures through variable rates, Ord and Marina respectively.

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 two demand stages— up to 10 percent and up to 20 percent—from projected FYE 2018 demands. These demand stages are presented as ranges because drops in demand cannot be easily targeted and can be volatile from month to month. The District will have the ability to implement these rates when necessary to provide sufficient revenues under various drought, water shortage, or demand reduction/restriction periods. The rates can either be implemented proactively (known shortage or drought) or reactively (wait and see if reductions are prolonged and whether existing reserves are sufficient). The projected demand revenue requirements and proposed rate are shown in the following table.

Table 5.16 Demand Management Rates

	Ord Water		Marina Water	
Reduction Level (estimated)	10%	20%	10%	20%
Revenue Impact (thousands)	$395	$655	$275	$450
Revenue Impact (%)	12%	34%	11%	29%
Avoided Cost (Variable Costs)	($0)	($0)	($0)	($0)
Total Additional Revenue Need	$395K	$655K	$275K	$450K
Fixed Rate Recovery Only ($/ME/Month)	$4.04	$6.43	$3.95	$6.51
Variable Rate Recovery Only ($/hcf)	$0.84	$1.51	$0.51	$0.91

While the District has an option of implementing the rate surcharges between fixed and variable revenue sources, it is recommended that the District Implement the Variable Rate alternative, whereby the surcharge is added on to each unit cost of water in the Commodity Rate, when required in time of need as determined by the Board.

5.6 Sewer Rate Recommendation

Based on discussion with District staff and careful review of the cost of service analysis, Carollo recommends that the District implement the following sewer rate design recommendations

- *Retain the current rate structure.* Through customer and billing data analysis, the study has found that the current rate structure is reasonable and appropriate. The current rate structure, also developed by Carollo in 2013, uses the same conceptual foundation and methodology as this current analysis. It provides customer equity by assigning EDU's to each customer based on wastewater demand factors, and provides a consistent and predictable source of revenue.
- *Implement Rates on January 1st of each year*. Although water consumption does not affect the monthly sewer charge, implementing during the low water use months is advantageous as the customers overall cost for water and sewer is lower than in the peak months. Additionally, implementing water and sewer revenue increases in the same month simplifies procedures required by Proposition 218.

The sewer rates were then calculated based on the allocation in Section 4.2. The resulting sewer rates can be seen below.

Table 5.17 Projected Sewer Rates

	Existing	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
Marina Monthly Rate per EDU	$14.78	$15.37	$15.99	$16.63	$17.29	$17.98
Ord Monthly Rate per EDU	$32.18	$33.80	$34.85	$35.90	$37.00	$38.15

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6. Appendices

Operations and Maintenance Budget

		Adopted	Forecasted -->				
		FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
1							
2	REVENUES						
3	**Ord Water Revenues**						
4	Water Sales	$ 4,822,720	$ 6,245,596	$ 6,869,420	$ 7,417,237	$ 7,863,397	$ 8,336,876
5	Flat Rate Customers	750,000					
6	Capacity Charge	2,735,414	2,790,122	2,845,925	2,902,843	2,960,900	3,020,118
6	Fire System Charge	162,614	165,866	182,718	197,554	209,566	222,307
7	Fees & Permits	1,013,197	898,119	898,119	898,119	898,119	898,119
8	Non-Operating Revenues	453,160	462,704	462,704	462,704	462,704	462,704
9	**Total**	**$ 9,937,104**	**$ 10,562,408**	**$ 11,258,886**	**$ 11,878,457**	**$ 12,394,685**	**$ 12,940,124**
10	**Ord Sewer Revenues**						
11	Sewer Sales	$ 2,471,605	$ 2,717,510	$ 2,911,401	$ 3,061,881	$ 3,217,215	$ 3,382,109
12	Capacity Charge	948,431	967,400	986,748	1,006,483	1,026,612	1,047,144
13	Fees & Permits	129,500	125,000	125,000	125,000	125,000	125,000
14	Other Revenues	120,264	120,000	120,000	120,000	120,000	120,000
15	**Total**	**$ 3,669,800**	**$ 3,929,910**	**$ 4,143,149**	**$ 4,313,364**	**$ 4,488,828**	**$ 4,674,253**
16	**Marina Water Revenues**						
17	Water Sales	$ 3,777,335	$ 3,841,349	$ 4,034,531	$ 4,238,470	$ 4,451,886	$ 4,674,304
18	Capacity Charge	44,356	44,800	45,248	45,700	46,157	46,619
19	Fire System Charge	86,895	87,764	92,187	96,833	101,714	106,840
20	Fees & Permits	16,050	16,050	16,050	16,050	16,050	16,050
21	Non-Opperating Revenues	161,948	161,948	161,948	161,948	161,948	161,948
22	**Total**	**$ 4,086,584**	**$ 4,151,911**	**$ 4,349,964**	**$ 4,559,001**	**$ 4,777,755**	**$ 5,005,761**
23	**Marina Sewer Revenues**						
24	Sewer Sales	$ 1,147,855	$ 1,348,894	$ 1,416,878	$ 1,488,289	$ 1,563,298	$ 1,642,089
25	Capacity Charge	25,663	25,920	26,179	26,441	26,705	26,972
26	Fees & Permits	-	-	-	-	-	-
27	Other Revenues	48,309	48,309	48,309	48,309	48,309	48,309
28	**Total**	**$ 1,221,828**	**$ 1,423,123**	**$ 1,491,366**	**$ 1,563,038**	**$ 1,638,313**	**$ 1,717,370**
29	**Total**	**$ 18,917,334**	**$ 20,069,371**	**$ 21,245,385**	**$ 22,315,882**	**$ 23,301,603**	**$ 24,339,531**

Operations and Maintenance Budget

		Adopted	Forecasted -->				
		FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
30	EXPENSES						
31	**Ord Expenditures**						
32	**Water Administration**						
33	Salaries & Benefits	$ 1,196,248	$ 1,234,528	$ 1,274,033	$ 1,314,802	$ 1,356,875	$ 1,400,295
34	Department Expense	803,393	829,102	855,633	883,013	911,269	940,430
35	Interest Expense	1,555,536	1,712,186	1,794,428	1,357,304	1,481,623	1,479,895
36	Franchise & Admin Fee	494,230	510,045	526,367	543,211	560,593	
37	**Subtotal**	**$ 4,049,407**	**$ 4,285,860**	**$ 4,450,460**	**$ 4,098,329**	**$ 4,310,361**	**$ 3,820,620**
38	**Water Laboratory**						
39	Salaries & Benefits	$ 132,877	$ 137,129	$ 141,517	$ 146,046	$ 150,719	$ 155,542
40	Dept. Expenses	98,935	102,101	105,368	108,740	112,220	115,811
41	**Subtotal**	**$ 231,812**	**$ 239,230**	**$ 246,885**	**$ 254,786**	**$ 262,939**	**$ 271,353**
42	**Water Coservation**						
43	Salaries & Benefits	$ 174,203	$ 179,777	$ 185,530	$ 191,467	$ 197,594	$ 203,917
44	Dept. Expenses	104,732	108,083	111,542	115,111	118,795	122,596
45	**Subtotal**	**$ 278,935**	**$ 287,861**	**$ 297,072**	**$ 306,579**	**$ 316,389**	**$ 326,514**
46	**Water Engineering**						
47	Salaries & Benefits	$ 409,903	$ 423,020	$ 436,557	$ 450,526	$ 464,943	$ 479,821
48	Dept. Expenses	935,998	965,950	996,860	1,028,760	1,061,680	1,095,654
49	**Subtotal**	**$ 1,345,901**	**$ 1,388,970**	**$ 1,433,417**	**$ 1,479,286**	**$ 1,526,623**	**$ 1,575,475**
50	**GSA Project & Desal**						
51	Consultant Fees		$ 585,955	$ 585,955			
52	Montioring Costs				310,000	310,000	310,000
53	RUWAP Debt					412,984	412,984
54	RUWAP O&M			296,845	399,897	412,694	425,900
55	**Subtotal**	**$ -**	**$ 585,955**	**$ 882,801**	**$ 709,897**	**$ 1,135,678**	**$ 1,148,884**
50	**Water O&M**						
56	Salaries & Benefits	$ 705,045	$ 727,606	$ 750,889	$ 774,918	$ 799,715	$ 825,306
57	Department Expense	1,039,620	1,072,888	1,107,220	1,142,651	1,179,216	1,216,951
58	Power		-	-	-	-	-
59	Maint & Equipment		-	-	-	-	-
60	**Subtotal**	**$ 1,744,665**	**$ 1,800,494**	**$ 1,858,110**	**$ 1,917,569**	**$ 1,978,931**	**$ 2,042,257**
61	**Total Ord Water Expenditures**	**$ 7,650,719**	**$ 8,588,370**	**$ 9,168,745**	**$ 8,766,446**	**$ 9,530,921**	**$ 9,185,103**
62	**Net Ord Water Revenues**	**$ 2,286,385**	**$ 1,974,037**	**$ 2,090,141**	**$ 3,112,011**	**$ 2,863,764**	**$ 3,755,021**
63	**Sewer Administration**						
64	Salaries & Benefits	$ 308,657	$ 318,534	$ 328,728	$ 339,247	$ 350,103	$ 361,306
65	Department Expense	201,251	207,691	214,337	221,196	228,274	235,579
66	Interest Expense	518,512	662,327	811,973	706,824	707,344	706,768
67	Franchise & Admin Fee	172,295	177,808	183,498	189,370	195,430	201,684
68	**Subtotal**	**$ 1,200,715**	**$ 1,366,361**	**$ 1,538,536**	**$ 1,456,637**	**$ 1,481,151**	**$ 1,505,337**
69	**Sewer O&M**						
70	Salaries & Benefits	$ 410,762	$ 423,906	$ 437,471	$ 451,470	$ 465,917	$ 480,827
71	Department Expense	211,465	218,232	225,215	232,422	239,860	247,535
72	Power		-	-	-	-	-
73	Maint & Equipment		-	-	-	-	-
74	**Subtotal**	**$ 622,227**	**$ 642,138**	**$ 662,687**	**$ 683,893**	**$ 705,777**	**$ 728,362**
75	**Sewer Engineering**						
76	Salaries & Benefits	$ 67,813	$ 69,983	$ 72,222	$ 74,534	$ 76,919	$ 79,380
77	Dept. Expenses	184,518	$ 190,423	$ 196,516	$ 202,805	$ 209,294	$ 215,992
78	**Subtotal**	**$ 252,331**	**$ 260,406**	**$ 268,739**	**$ 277,338**	**$ 286,213**	**$ 295,372**
79	**Total Ord Sewer Expenditures**	**$ 2,075,273**	**$ 2,268,905**	**$ 2,469,961**	**$ 2,417,868**	**$ 2,473,142**	**$ 2,529,071**
80	**Net Ord Sewer Revenues**	**$ 1,594,527**	**$ 1,661,006**	**$ 1,673,188**	**$ 1,895,495**	**$ 2,015,686**	**$ 2,145,182**

Operations and Maintenance Budget

		Adopted	Forecasted -->				
		FYE 2018	FYE 2019	FYE 2020	FYE 2021	FYE 2022	FYE 2023
81	**Marina Expenditures**						
82	**Water Administration**						
83	Salaries & Benefits	$ 553,862	$ 571,586	$ 589,876	$ 608,752	$ 628,232	$ 648,336
84	Department Expense	375,845	387,872	400,284	413,093	426,312	439,954
85	Interest Expense	631,937	630,201	616,205	438,623	439,257	438,555
86	Franchise & Admin Fee	-	-	-	-	-	-
87	**Subtotal**	**$ 1,561,644**	**$ 1,589,659**	**$ 1,606,365**	**$ 1,460,469**	**$ 1,493,801**	**$ 1,526,845**
88	**Water O&M**						
89	Salaries & Benefits	$ 662,770	$ 683,978	$ 705,866	$ 728,453	$ 751,764	$ 775,820
90	Department Expense	373,255	385,199	397,526	410,246	423,374	436,922
91	Power		-	-	-	-	-
92	Maint & Equipment		-	-	-	-	-
93	**Subtotal**	**$ 1,036,025**	**$ 1,069,177**	**$ 1,103,391**	**$ 1,138,700**	**$ 1,175,138**	**$ 1,212,742**
94	**Water Laboratory**						
95	Salaries & Benefits	$ 62,529	$ 64,530	$ 66,595	$ 68,726	$ 70,925	$ 73,195
96	Dept. Expenses	43,736	$ 45,136	$ 46,580	$ 48,070	$ 49,609	$ 51,196
97	**Subtotal**	**$ 106,265**	**$ 109,665**	**$ 113,175**	**$ 116,796**	**$ 120,534**	**$ 124,391**
98	**Water Coservation**						
99	Salaries & Benefits	$ 81,978	$ 84,601	$ 87,309	$ 90,102	$ 92,986	$ 95,961
100	Dept. Expenses	118,518	$ 122,311	$ 126,225	$ 130,264	$ 134,432	$ 138,734
101	**Subtotal**	**$ 200,496**	**$ 206,912**	**$ 213,533**	**$ 220,366**	**$ 227,418**	**$ 234,695**
102	**GSA Project & Desal**						
103	Consultant Fees		$ 359,134	$ 359,134			
104	Montioring Costs				190,000	190,000	190,000
105	RUWAP Debt					$ 449,248	$ 449,248
106	RUWAP O&M			$ 329,337	$ 435,013	$ 448,933	$ 463,299
107	**Subtotal**	**$ -**	**$ 359,134**	**$ 688,471**	**$ 625,013**	**$ 1,088,181**	**$ 1,102,547**
108	**Water Engineering**						
109	Salaries & Benefits	$ 201,013	$ 207,445	$ 214,084	$ 220,934	$ 228,004	$ 235,300
110	Dept. Expenses	246,925	$ 254,827	$ 262,981	$ 271,396	$ 280,081	$ 289,044
111	**Subtotal**	**$ 447,938**	**$ 462,272**	**$ 477,065**	**$ 492,331**	**$ 508,085**	**$ 524,344**
112	**Total Marina Water Expenses**	**$ 3,352,367**	**$ 3,796,819**	**$ 4,202,000**	**$ 4,053,674**	**$ 4,613,158**	**$ 4,725,565**
113	**Marina Water Net Revenue**	**$ 734,217**	**$ 355,092**	**$ 147,964**	**$ 505,327**	**$ 164,598**	**$ 280,196**
114	**Sewer Administration**						
115	Salaries & Benefits	$ 154,329	$ 159,267	$ 164,364	$ 169,623	$ 175,051	$ 180,653
116	Department Expense	101,007	104,239	107,575	111,017	114,570	118,236
117	Interest Expense	92,434	162,035	161,590	158,001	112,468	112,630
118	Franchise & Admin Fee	-	-	-	-	-	-
119	**Subtotal**	**$ 347,770**	**$ 425,541**	**$ 433,529**	**$ 438,642**	**$ 402,089**	**$ 411,519**
120	**Sewer O&M**						
121	Salaries & Benefits	$ 195,884	$ 202,152	$ 208,621	$ 215,297	$ 222,187	$ 229,297
122	Department Expense	24,523	25,308	26,118	26,953	27,816	28,706
123	Power	10,376	10,708	11,051	11,404	11,769	12,146
124	Maint & Equipment	1,355	1,398	1,443	1,489	1,537	1,586
125	**Subtotal**	**$ 232,138**	**$ 239,567**	**$ 247,233**	**$ 255,144**	**$ 263,309**	**$ 271,735**
126	**Sewer Engineering**						
127	Salaries & Benefits	$ 247,007	$ 254,911	$ 263,068	$ 271,486	$ 280,174	$ 289,140
128	Dept. Expenses	48,310	$ 49,856	$ 51,451	$ 53,098	$ 54,797	$ 56,550
129	**Subtotal**	**$ 295,317**	**$ 304,767**	**$ 314,520**	**$ 324,584**	**$ 334,971**	**$ 345,690**
	Marina Sewer Total Expenses	**$ 875,225**	**$ 969,875**	**$ 995,281**	**$ 1,018,370**	**$ 1,000,368**	**$ 1,028,944**
	Marina Sewer Net Revenue	**$ 346,603**	**$ 453,247**	**$ 496,085**	**$ 544,668**	**$ 637,944**	**$ 688,426**

Marina Coast Water District
DRAFT Five-Year CIP (unescalated from FYE 2017)

CIP No.	PROJECT DESCRIPTION	FY 2016-17 Remaining	FY 2017-18 Approved	FY 2018-19 Proposed	FY 2019-20 Proposed	FY 2020-21 Proposed	FY 2021-22 Proposed	FY 2022-23 Proposed	OUT YEARS	TOTAL	CATEGORY	% Ord Water	% Ord Sewer	% Marina Water	% Marina Sewer	% Current users
	Marina Water															
MW-0238	Well 12 Rehabilitation and Pump Replacement	$0	$400,000	$0	$0	$0	$0	$0	$0	$400,000	E			100%		100%
MW-0111	Beach Road Pipeline	$0	$0	$0	$150,000	$344,815	$0	$0	$0	$494,815	E			100%		100%
MW-0163	Repair & Recoat Reservoir 2	$0	$0	$0	$0	$0	$0	$500,000	$0	$500,000	E			100%		100%
MW-0109	Lake Court Waterline Extension	$0	$0	$0	$0	$0	$0	$0	$500,000	$500,000	S			100%		0%
MW-0201	Salinas Ave Pipeline Extension	$0	$0	$0	$0	$0	$0	$0	$450,000	$450,000	E			100%		100%
MW-0202	Reservoir 2 Demolition	$0	$0	$0	$0	$0	$0	$0	$710,000	$710,000	E			100%		100%
	Marina Sewer															
MS-0133	Replace Lift Station No. 5 (Cosky) - In Construction	$688,545	$0	$0	$0	$0	$0	$0	$0	$688,545	E				100%	100%
MS-0143	Lift Station No. 6 Replacement	$0	$0	$0	$700,000	$0	$0	$0	$0	$700,000	E				100%	100%
MS-0202	Carmel Ave Sewer Main Imp Project	$0	$0	$0	$60,000	$330,000	$0	$0	$0	$390,000	E				100%	100%
MS-0138	Hillcrest Ave/Sunset Ave Sewer Main Imp. Project	$0	$0	$0	$0	$60,000	$300,000	$0	$0	$360,000	E				100%	100%
MS-0141	Reservation Rd from Nicklas Lane to Crescent Ave.	$0	$0	$0	$0		$598,000	$0	$0	$598,000	E				100%	100%
MS-0172	Reservation Rd from Crescent to Seacrest	$0	$0	$0	$0	$0	$0	$654,000	$0	$654,000	E				100%	100%
MS-0203	Abdy Way & Paul Davis Dr Sewer Main Imps Project	$0	$0	$0	$0	$0	$0	$0	$1,116,000	$1,116,000	S				100%	0%
MS-0205	Del Monte/Reservation Road Sewer Main Imp. Project I	$0	$0	$0	$0	$0	$0	$0	$240,000	$240,000	M				100%	0%
MS-0137	Del Monte/Reservation Road Sewer Main Imp. Project II	$0	$0	$0	$0	$0	$0	$0	$375,000	$375,000	M				100%	0%
MS-0201	Armstrong Ranch Sewer Improvements	$0	$0	$0	$0	$0	$0	$0	$5,428,600	$5,428,600	M				100%	0%
MS-0207	Marina WWTP Demolition	$0	$0	$0	$0	$0	$0	$0	$883,300	$883,300	E				100%	100%

	Category Legend	
100%	E	CIP supports existing Infrastructure
0%	EDS	Eastern Distribution System (inland well-field)
0%	S	CIP supports a single parcel's or owner's project
0%	M	CIP supports projects for multiple parcels or owners

Marina Coast Water District
DRAFT Five-Year CIP (unescalated from FYE 2017)

CIP No.	PROJECT DESCRIPTION	FY 2016-17 Remaining	FY 2017-18 Approved	FY 2018-19 Proposed	FY 2019-20 Proposed	FY 2020-21 Proposed	FY 2021-22 Proposed	FY 2022-23 Proposed	OUT YEARS	TOTAL	CATEGORY	% Ord Water	% Ord Sewer	% Marina Water	% Marina Sewer	% Current users
OW-0000	**Ord Water**															
OW-0206	Inter-Garrison Road Pipeline Up-Sizing - In Design	$10,000	$119,825	$0	$0	$0	$0	$0	$0	$129,825	E	100%				100%
OW-0193	Imjin Parkway Pipeline, Reservation Rd to Abrams Drive	$0	$102,000	$800,000	$0	$0	$0	$0	$0	$902,000	E	100%				100%
OW-0202	South Boundary Road Pipeline	$0	$205,000	$0	$1,300,000	$0	$0	$0	$0	$1,505,000	M	100%				0%
OW-0201	Gigling Transmission from D Booster to JM Blvd	$0	$0	$125,000	$0	$400,000				$525,000	E	100%				100%
OW-0230	Wellfield Main 2B -Well 31 to Well 34	$0	$0	$0	$170,000	$0	$200,000	$540,000	$0	$910,000	E	100%				100%
OW-0127	CSUMB Pipeline Up-Sizing -Commercial Fireflow	$0	$0	$0	$100,000	$0	$100,000	$0	$150,000	$350,000	E	100%				100%
OW-0211	Eastside Parkway (D-Zone pipeline)	$0	$0	$0	$420,000	$2,500,000	$0	$0	$0	$2,920,000	M	100%				0%
OW-0203	7th Avenue and Gigling Rd	$0	$0	$70,000	$200,000					$270,000	E	100%				100%
OW-0129	Rehabilitate Well 31	$0	$0	$0	$0	$0	$0	$1,710,000	$0	$1,710,000	E	100%				100%
OW-0122	Replace D & E Reservoir Off-Site Piping	$0	$0	$0	$0	$0	$0	$0	$1,100,000	$1,100,000	E	100%				100%
OW-0167	2nd Ave extension to Gigling Rd	$0	$0	$0	$0	$0	$0	$0	$275,000	$275,000	E	100%				100%
OW-0118	B4" Zone Tank @ East Garrison "	$0	$0	$0	$0	$0	$0	$3,100,000	$0	$3,100,000	S	100%				0%
OW-0212	Reservoir D2" + D-BPS Up-Size "	$0	$0	$0	$0	$0	$0	$0	$4,000,000	$4,000,000	E	100%				100%
OW-0208	Pipeline Up-Sizing -to Stockade	$0	$0	$0	$0	$0	$0	$0	$710,000	$710,000	S	100%				0%
OW-0209	Pipeline Up-Sizing -between Dunes & MainGate	$0	$0	$0	$0	$0	$0	$300,000	$0	$300,000	M	100%				0%
OW-0210	Sand Tank Demolition	$0	$0	$0	$0	$0	$0	$540,000	$0	$540,000	E	100%				100%
OW-0204	2nd Ave Connection, Reindollar to Imjin Pkwy	$0	$0	$0	$0	$0	$0	$0	$1,215,000	$1,215,000	E	100%				100%
OW-0214	Imjin Road, 8th St. to Imjin Pkwy	$0	$0	$0	$0	$0	$0	$0	$1,100,000	$1,100,000	E	100%				100%
OW-0121	C2" to "B4" Pipeline and PRV Station "	$0	$0	$0	$0	$0	$0	$0	$1,410,000	$1,410,000	S	100%				0%
OW-0171	Eucalyptus Rd Pipeline	$0	$0	$0	$0	$0	$0	$0	$2,350,000	$2,350,000	M	100%				0%
OW-0213	Reservoir B4/B5 to East Garrison Pipeline	$0	$0	$0	$0	$0	$0	$0	$260,000	$260,000	S	100%				0%
OW-0216	UCMBEST Pipeline	$0	$0	$0	$0	$0	$0	$0	$762,500	$762,500	S	100%				0%
OW-0217	Reservation Road, Imjin to MBEST Drive	$0	$0	$0	$0	$0	$0	$0	$727,000	$727,000	M	100%				0%
OW-0218	Golf Boulevard Transmission Line	$0	$0	$0	$0	$0	$0	$0	$1,100,000	$1,100,000	M	100%				0%
OW-0219	B5" Zone Tank @ East Garrison " & Pipeline	$0	$0	$0	$0	$0	$0	$0	$3,600,000	$3,600,000	S	100%				0%
OW-0231	Wellfield Main 3A -Intergarrison to ASP Bldg	$0	$0	$0	$0	$0	$0	$0	$3,550,000	$3,550,000	E	100%				100%
OW-0232A	Install Well 36 -Retire Well 29	$0	$0	$0	$0	$0	$0	$0	$3,000,000	$3,000,000	E	100%				100%
OW-0232B	Wellfield Main 1B -between Wells 36 and 35	$0	$0	$0	$0	$0	$0	$0	$3,200,000	$3,200,000	E	100%				100%
OW-0233	Wellfield Main 1C (Parallel) Well 36 to ASP Bldg	$0	$0	$0	$0	$0	$0	$0	$3,750,000	$3,750,000	M	100%				0%
OW-0234	B-BPS at ASP Bldg	$0	$0	$0	$0	$0	$0	$0	$1,355,000	$1,355,000	M	100%				0%
OW-0235	Ord Well-head Disinfection	$0	$0	$0	$0	$0	$0	$0	$2,750,000	$2,750,000	M	100%				0%

Marina Coast Water District
DRAFT Five-Year CIP (unescalated from FYE 2017)

CIP No.	PROJECT DESCRIPTION	FY 2016-17 Remaining	FY 2017-18 Approved	FY 2018-19 Proposed	FY 2019-20 Proposed	FY 2020-21 Proposed	FY 2021-22 Proposed	FY 2022-23 Proposed	OUT YEARS	TOTAL	CATEGORY	% Ord Water	% Ord Sewer	% Marina Water	% Marina Sewer	% Current users
OS-0000	**Ord Sewer**															
OS-0147	Ord Village Sewer Pipeline & Lift Station Impr Project	$110,000	$610,000	$0	$0	$0	$0	$0	$0	$720,000	E		100%			100%
OS-0205	Imjin LS & Force Main Improvements-Phase 1	$0	$650,000	$0	$0	$0	$0	$0	$0	$650,000	M		100%			0%
OS-0152	Hatten, Booker, Neeson LS Improvements Project	$0	$0	$525,000	$0	$0	$0	$0	$400,000	$925,000	E		100%			100%
OS-0203	Gigling LS and FM Improvements -In Design	$65,000	$0	$0	$2,125,000	$0	$0	$0	$0	$2,190,000	E		100%			100%
OS-0153	Misc. Lift Station Improvements	$0	$0	$0	$561,000	$929,000	$0	$0	$0	$1,490,000	E		100%			100%
OS-0209	Imjin LS & Force Main Improvements-Phase 2	$0	$0	$1,500,000	$0	$0	$0	$0	$0	$1,500,000	E		100%			100%
OS-0154	Del Rey Oaks-Collection System Planning	$0	$0	$0	$0	$70,000	$0	$0	$0	$70,000	S		100%			0%
OS-0202	SCSD Sewer Improvements-DRO	$0	$0	$0	$0	$502,454	$0	$0	$1,537,510	$2,039,964	S		100%			0%
OS-0204	CSUMB Developments	$0	$0	$0	$0	$625,000	$0	$0	$0	$625,000	S		100%			0%
OS-0207	Seaside Resort Sewer Imps. Project	$0	$0	$0	$0	$0	$330,000	$0	$0	$330,000	S		100%			0%
OS-0149	Dunes Sewer Pipeline Replacement Projects	$0	$0	$0	$0	$0	$465,000	$0	$0	$465,000	M		100%			0%
OS-0208	Parker Flats Collection System	$0	$0	$0	$0	$105,000	$0	$0	$0	$105,000	M		100%			0%
OS-0151	Cypress Knolls Sewer Pipeline Improvements Project	$0	$0	$0	$0	$0	$100,000	$0	$0	$100,000	S		100%			0%
OS-0215	Demolish Ord Main Garrison WWTP	$0	$0	$0	$0	$0	$0	$0	$1,625,000	$1,625,000	E		100%			100%
OS-0148	Marina Heights Sewer Pipeline Improvements Project	$0	$0	$0	$0	$0	$0	$830,000	$0	$830,000	M		100%			0%
OS-0150	East Garrison Lift Station Improvements	$0	$0	$0	$0	$0	$0	$0	$550,000	$550,000	E		100%			100%
OS-0206	Fitch Park Sewer Improvements	$0	$0	$0	$0	$0	$0	$0	$127,071	$127,071	S		100%			0%
OS-0210	1st Ave Sewer Pipeline Replacement Project	$0	$0	$0	$0	$0	$0	$0	$410,000	$410,000	M		100%			0%
OS-0211	Gen'l Jim Moore Sewer Pipeline Replacement Project	$0	$0	$0	$0	$0	$0	$0	$50,000	$50,000	M		100%			0%
OS-0212	Gen'l Jim Moore Sewer Pipeline Replacement Project III	$0	$0	$0	$0	$0	$0	$0	$185,000	$185,000	M		100%			0%
OS-0214	Intergarrison/8th Ave SS (for Eastside Pkwy developments)	$0	$0	$0	$0	$0	$0	$0	$0	$0	M		100%			0%
OS-0213	MRWPCA Buy-In	$0	$0	$0	$0	$0	$0	$0	$11,100,000	$11,100,000	M		100%			0%
OS-0216	SCSD Sewer Improvements-Seaside East	$0	$0	$0	$0	$0	$0	$0	$6,500,000	$6,500,000	S		100%			0%
OS-0217	SCSD Sewer Improvements-City of Monterey	$0	$0	$0	$0	$0	$0	$0	$1,400,000	$1,400,000	S		100%			0%

Category Legend

E=	CIP supports existing Infrastructure
EDS=	Eastern Distribution System (inland well-field)
S=	CIP supports a single parcel's or owner's project
M=	CIP supports projects for multiple parcels or owners

Marina Coast Water District
DRAFT Five-Year CIP (unescalated from FYE 2017)

CIP No.	PROJECT DESCRIPTION	FY 2016-17 Remaining	FY 2017-18 Approved	FY 2018-19 Proposed	FY 2019-20 Proposed	FY 2020-21 Proposed	FY 2021-22 Proposed	FY 2022-23 Proposed	OUT YEARS	TOTAL	CATEGORY	% Ord Water	% Ord Sewer	% Marina Water	% Marina Sewer	% Current users
	General Water (32% Marina, 68% Ord)															
GW-0112	A1 & A2 Zone Tanks & B/C Booster Station - LandAcquisition Issue	$3,644,720	$0	$3,265,000	$3,370,000	$0	$0	$0	$0	$10,279,720	M	68%		32%		50%
GW-0123	B2" Zone Tank @ CSUMB "	$200,000	$0	$0	$0	$0	$0	$0	$2,415,000	$2,615,000	M	68%		32%		0%
GW-0210	Reservoir A3 (1.6 MG)	$0	$0	$0	$0	$0	$0	$0	$3,470,000	$3,470,000	M	68%		32%		0%
GW-0231	Install Well 37 -Retire well 12	$0	$0	$0	$0	$0	$0	$0	$6,250,000	$6,250,000	EDS	68%		32%		0%
GW-0232	Install Well 38 -Retire well 10	$0	$0	$0	$0	$0	$0	$0	$6,250,000	$6,250,000	EDS	68%		32%		0%
GW-0233	A-BPS at ASP Bldg + Forebay Tank	$0	$0	$0	$0	$0	$0	$0	$1,670,000	$1,670,000	EDS	68%		32%		0%
GW-0234	Install Well 39 -Retire Well 30	$0	$0	$0	$0	$0	$0	$0	$6,250,000	$6,250,000	EDS	68%		32%		0%
GW-0235	B-BPS Expansion and Transmission to A1/A2 Tanks	$0	$0	$0	$0	$0	$0	$0	$13,100,000	$13,100,000	EDS	68%		32%		0%
GW-0236	Install Well 40 -Retire Well 11	$0	$0	$0	$0	$0	$0	$0	$6,250,000	$6,250,000	EDS	68%		32%		0%
GW-0237	Install Well 41 -Retire Well 31	$0	$0	$0	$0	$0	$0	$0	$6,250,000	$6,250,000	EDS	68%		32%		0%
	General Sewer (37% Marina, 63% Ord)															
GS-0200	Odor Control Project	$0	$0	$0	$0	$0	$0	$0	$120,000	$120,000	E		65%		35%	100%
GS-0201	Del Monte/Reservation Road Sewer Main Improvements	$0	$0	$0	$0	$0	$0	$0	$275,000	$275,000	E		65%		35%	100%
	Water District-Wide (27% MW, 7%MS, 54%OW, 12%OS)															
WD-0106	Corp Yard Demolition & Rehab	$0	$120,000	$450,000	$0	$500,000	$3,000,000	$0	$2,000,000	$6,070,000	E	54%	14%	25%	7%	80%
WD-0110	Asset Management Program -Phase II	$0	$0	$0	$0	$0	$0	$0	$250,000	$250,000	E	54%	14%	25%	7%	100%
WD-0110A	Asset Management Program --Phase III	$0	$0	$0	$0	$0	$0	$0	$250,000	$250,000	E	54%	14%	25%	7%	100%
WD-0115	SCADA System Improvements -Phase II - Designed	$311,987	$0	$0	$0	$0	$0	$0	$0	$311,987	E	54%	14%	25%	7%	100%
WD-0115A	SCADA System Improvements (Security + RD integration)	$0	$0	$0	$0	$0	$0	$0	$410,000	$410,000	E	54%	14%	25%	7%	100%
	Shared Project Costs															
	Marina Water Cost Center Share	$1,308,307	$30,000	$1,157,300	$1,078,400	$125,000	$750,000	$0	$17,337,100	$21,786,107						
	Marina Sewer Cost Center Share	$21,839	$8,400	$31,500	$0	$35,000	$210,000	$0	$349,850	$656,589						
	Ord Water Cost Center Share	$1,398,783	$64,800	$1,287,800	$1,078,400	$270,000	$1,620,000	$0	$18,181,000	$23,900,783						
	Ord Sewer Cost Center Share	$43,678	$16,800	$63,000	$0	$70,000	$420,000	$0	$656,250	$1,269,728						
	Total Costs															
	Marina Water	$1,308,307	$430,000	$1,157,300	$1,228,400	$469,815	$750,000	$500,000	$18,997,100	$24,840,922						
	Marina Sewer	$710,384	$8,400	$31,500	$760,000	$425,000	$1,108,000	$654,000	$8,392,750	$12,090,034						
	Ord Water	$1,408,783	$491,625	$2,282,800	$3,268,400	$3,170,000	$1,920,000	$6,190,000	$54,545,500	$73,277,108						
	Ord Sewer	$218,678	$1,276,800	$2,088,000	$2,686,000	$2,301,454	$1,315,000	$830,000	$24,540,831	$35,256,763						
	Total	**$3,646,153**	**$2,206,825**	**$5,559,600**	**$7,942,800**	**$6,366,269**	**$5,093,000**	**$8,174,000**	**$106,476,181**	**$145,464,828**						
	Total Costs - Current Users Only															
	Marina Water	$661,152	$424,000	$612,400	$689,200	$444,815	$600,000	$500,000	$3,931,567							
	Marina Sewer	$710,384	$6,720	$25,200	$760,000	$418,000	$1,066,000	$654,000	$3,640,304							
	Ord Water	$1,417,678	$273,665	$2,299,500	$1,615,800	$616,000	$1,596,000	$2,790,000	$10,608,643							
	Ord Sewer	$218,678	$623,440	$2,075,400	$2,686,000	$985,000	$336,000	$0	$6,924,518							
	Total	**$3,007,892**	**$1,327,825**	**$5,012,500**	**$5,751,000**	**$2,463,815**	**$3,598,000**	**$3,944,000**	**$25,105,032**							
	Water Augmentation															
RW-0156	RUWAP ATW - Normandy to MRWPCA	$4,000,000	$17,000,000	$10,729,468	$0	$0	$0		$0	$31,729,468						
	RUWAP - Distribution System	$0	$0	$5,000,000	$6,440,000	$0	$0		$0	$11,440,000						
		$4,000,000	$17,000,000	$15,729,468	$6,440,000	$0	$0	$0	$0	$43,169,468						

Marina Coast Water District

Water and Sewer Functional Allocation

Line #	Allocation Index		Customer	Capacity	Base	Peak	Sewer	As All Others
1	Customer Only	*Costs that are common to all accounts*	100%					0%
2	Capacity Only	*Costs that vary based on demand or engineering metrics*		100%				0%
3	Base Only	*Water costs that are common across all unit of demand*			100%			0%
4	Ord Peak Only	*Water costs that increase based on peak or demand*				100%		0%
5	Marina Peak Only	*Water costs that increase based on peak or demand*				100%		0%
6	Recycled Only	*Costs specifically related to the Recyeled Water*						100%
7	Ord System Peaking	*Costs that are common to Base/Peak, but allocated based*			41%	59%		0%
8	Marina System Peaking	*Costs that are common to Base/Peak, but allocated based*			44%	56%		0%
9	Ord Capacity / Peaking	*Capital costs that are split between the fixed charge and*		25%	31%	44%		0%
10	Marina Capacity / Peaking	*Capital costs that are split between the fixed charge and*		25%	33%	42%		0%
11	Fixed (Water)	*Fixed costs that may be shared between functions*		100%				0%
12	Capacity/Base	*Split between capacity and base*		50%	50%			0%
13	Conveyance	*Costs that are incurred due to flow (conveyance)*		50%			50%	0%
14	Customer/Capacity	*Based on a detailed analysis of G&A line-item costs*	50%	50%				0%
15	As All Others	*Catch all basis that uses the weighted average of the*						100%
16	Sewer/Water	*Fixed Allocation*		50%			50%	0%
17	Sewer Flow	*Sewer costs related to sewage flow*					100%	

		5 Year Average	Allocation Basis	Customer	Capacity	Base	Peak	Sewer	As All Others
22	**Ord Expenditures**								
23	**Water Administration**								
24	Salaries & Benefits	$ 1,295,059	Customer/Capacity	$ 647,530	$ 647,530	$ -	$ -	$ -	$ -
25	Department Expense	$ 869,754	Customer/Capacity	$ 434,877	$ 434,877	$ -	$ -	$ -	$ -
26	Interest Expense	$ 1,586,385	Capacity Only	$ -	$ 1,586,385	$ -	$ -	$ -	$ -
27	Franchise & Admin Fee	$ 535,054	Capacity/Base	$ -	$ 267,527	$ 267,527	$ -	$ -	$ -
28	**Water Laboratory**								
29	Salaries & Benefits	$ 143,853	Customer/Capacity	$ 71,926	$ 71,926	$ -	$ -	$ -	$ -
30	Dept. Expenses	$ 107,107	Customer/Capacity	$ 53,554	$ 53,554	$ -	$ -	$ -	$ -
31	**Water Coservation**								
32	Salaries & Benefits	$ 188,592	Ord Peak Only	$ -	$ -	$ -	$ 188,592	$ -	$ -
33	Dept. Expenses	$ 113,383	Ord Peak Only	$ -	$ -	$ -	$ 113,383	$ -	$ -
34	**Water Engineering**								
35	Salaries & Benefits	$ 443,761	Ord System Peaking	$ -	$ -	$ 181,517	$ 262,244	$ -	$ -
36	Dept. Expenses	$ 1,013,313	Ord System Peaking	$ -	$ -	$ 414,488	$ 598,824	$ -	$ -
37	**Water O&M**								
38	Salaries & Benefits	$ 763,282	Ord System Peaking	$ -	$ -	$ 312,215	$ 451,067	$ -	$ -
39	Department Expense	$ 1,125,494	Ord System Peaking	$ -	$ -	$ 460,375	$ 665,119	$ -	$ -
40	Power	$ -	Ord Capacity / Peaking	$ -	$ -	$ -	$ -	$ -	$ -
41	Maint & Equipment	$ -	Ord Capacity / Peaking	$ -	$ -	$ -	$ -	$ -	$ -
42	**Sewer Administration**								
43	Salaries & Benefits	$ 334,153	Sewer Flow	$ -	$ -	$ -	$ -	$ 334,153	$ -
44	Department Expense	$ 217,875	Sewer Flow	$ -	$ -	$ -	$ -	$ 217,875	$ -
45	Interest Expense	$ 722,117	Sewer Flow	$ -	$ -	$ -	$ -	$ 722,117	$ -
46	Franchise & Admin Fee	$ 186,527	Sewer Flow	$ -	$ -	$ -	$ -	$ 186,527	$ -
47	**Sewer O&M**								
48	Salaries & Benefits	$ 444,691	Sewer Flow	$ -	$ -	$ -	$ -	$ 444,691	$ -
49	Department Expense	$ 228,932	Sewer Flow	$ -	$ -	$ -	$ -	$ 228,932	$ -
50	Power	$ -	Sewer Flow	$ -	$ -	$ -	$ -	$ -	$ -
51	Maint & Equipment	$ -	Sewer Flow	$ -	$ -	$ -	$ -	$ -	$ -
52	**Sewer Engineering**								
53	Salaries & Benefits	$ 73,414	Sewer Flow	$ -	$ -	$ -	$ -	$ 73,414	$ -
54	Dept. Expenses	$ 199,759	Sewer Flow	$ -	$ -	$ -	$ -	$ 199,759	$ -
				$ 1,207,887	**$ 3,061,799**	**$ 1,636,123**	**$ 2,279,230**	**$ 2,407,469**	**$ -**
55	**Ord Water Allocation**			**15%**	**37%**	**20%**	**28%**	**0%**	
56	**Ord Sewer Allocation**			**0%**	**0%**	**0%**	**0%**	**100%**	
57	**Marina Expenditures**								
58	**Water Administration**								
59	Salaries & Benefits	$ 599,612	Customer/Capacity	$ 299,806	$ 299,806	$ -	$ -	$ -	$ -
60	Department Expense	$ 406,890	Marina Capacity / Peaking	$ -	$ 101,723	$ 134,583	$ 170,585	$ -	$ -
61	Interest Expense	$ 531,072	Customer/Capacity	$ 265,536	$ 265,536	$ -	$ -	$ -	$ -
62	Franchise & Admin Fee	$ -	Marina System Peaking	$ -	$ -	$ -	$ -	$ -	$ -
63	**Water O&M**								
64	Salaries & Benefits	$ 717,515	Marina System Peaking	$ -	$ -	$ 316,434	$ 401,082	$ -	$ -
65	Department Expense	$ 404,086	Marina Capacity / Peaking	$ -	$ 101,022	$ 133,655	$ 169,409	$ -	$ -
66	Power	$ -	Marina System Peaking	$ -	$ -	$ -	$ -	$ -	$ -
67	Maint & Equipment	$ -	Marina System Peaking	$ -	$ -	$ -	$ -	$ -	$ -
68	**Water Laboratory**								
69	Salaries & Benefits	$ 67,694	Marina System Peaking	$ -	$ -	$ 29,854	$ 37,840	$ -	$ -
70	Dept. Expenses	$ 47,349	Marina System Peaking	$ -	$ -	$ 20,881	$ 26,467	$ -	$ -
71	**Water Coservation**								
72	Salaries & Benefits	$ 88,749	Marina Peak Only	$ -	$ -	$ -	$ 88,749	$ -	$ -
73	Dept. Expenses	$ 128,308	Marina Peak Only	$ -	$ -	$ -	$ 128,308	$ -	$ -
74	**Water Engineering**								
75	Salaries & Benefits	$ 217,617	Marina System Peaking	$ -	$ -	$ 95,972	$ 121,645	$ -	$ -
76	Dept. Expenses	$ 267,321	Marina System Peaking	$ -	$ -	$ 117,892	$ 149,429	$ -	$ -
77	**Sewer Administration**								
78	Salaries & Benefits	$ 167,076	Sewer Flow	$ -	$ -	$ -	$ -	$ 167,076	$ -
79	Department Expense	$ 109,350	Sewer Flow	$ -	$ -	$ -	$ -	$ 109,350	$ -
80	Interest Expense	$ 148,523	Sewer Flow	$ -	$ -	$ -	$ -	$ 148,523	$ -
81	Franchise & Admin Fee	$ -	Sewer Flow	$ -	$ -	$ -	$ -	$ -	$ -
82	**Sewer O&M**								
83	Salaries & Benefits	$ 212,064	Sewer Flow	$ -	$ -	$ -	$ -	$ 212,064	$ -
84	Department Expense	$ 26,549	Sewer Flow	$ -	$ -	$ -	$ -	$ 26,549	$ -
85	Power	$ 11,233	Sewer Flow	$ -	$ -	$ -	$ -	$ 11,233	$ -
86	Maint & Equipment	$ 1,467	Sewer Flow	$ -	$ -	$ -	$ -	$ 1,467	$ -
87	**Sewer Engineering**								
88	Salaries & Benefits	$ 267,410	Sewer Flow	$ -	$ -	$ -	$ -	$ 267,410	$ -
89	Dept. Expenses	$ 52,300	Sewer Flow	$ -	$ -	$ -	$ -	$ 52,300	$ -
				$ 565,342	**$ 768,086**	**$ 849,271**	**$ 1,293,514**	**$ 995,974**	**$ -**
90	**Marina Water Allocation**			**16%**	**22%**	**24%**	**37%**	**0%**	
91	**Marina Sewer Allocation**			**0%**	**0%**	**0%**	**0%**	**100%**	