

Water & Sewer Rate Study



Final Report for
City of Norco, CA
November 15, 2016



November 15, 2016

Chad Blais
Director of Public Works
City of Norco
2870 Clark Avenue
Norco, CA 92860

Re: Water & Sewer Rate Study

Dear Mr. Blais:

Hawksley Consulting is pleased to present this Draft Report of the Water & Sewer Rate Study that we performed for the City's Water & Sewer Enterprise Funds.

We appreciate the effective and efficient support provided by you and all of the members of City staff who participated in the analysis. If you or others at the City have any questions, please do not hesitate to call me in our Bowie, Maryland office at (443) 538-1175, or Mark Hildebrand in our Walnut Creek, California office at (510) 316-0621.

It has been a pleasure to be of service to the City and we look forward to the possibility of doing so again in the future.

Sincerely,

A handwritten signature in black ink, appearing to read "David A. Hyder".

David A. Hyder
Principal

Enclosure

E1. INTRODUCTION

This Executive Summary presents an overview of the results of the Water and Sewer Rate Study (Study) that was conducted for the water and sewer systems (collectively the “Utility”) of the City of Norco (City) by Hawksley Consulting.

E.1.1 OBJECTIVES

The primary objectives of this Study are to:

- i. Develop a multi-year financial management plan for each fund that identifies future rate adjustments to water and sewer rates that will ensure adequate revenues to meet the ongoing financial requirements of each fund;
- ii. Integrate the capital funding needs per the City’s adopted Capital Improvements Plan for the Utility including evaluation of appropriate funding levels and sources of funds;
- iii. Identify appropriate reserve levels for each fund to provide financial stability and resiliency within the Utility; and
- iv. Recommend specific rate structures that equitably recover the cost of service, enhance revenue stability and conforms with industry practices and legal requirements.

E.1.2 GENERAL METHODOLOGY

The following phases were used to conduct this Study:

Perform a Revenue Sufficiency Analysis (RSA) – Develop and populate a multi-year forecasting model for each of the City’s water and sewer funds that was used to determine the level of annual revenue required to satisfy projected annual operating costs, debt service expenses, and capital cost requirements as well as maintain and develop adequate reserves.

Cost-of-Service Allocation (COSA) Analysis – Using the revenue requirements from the revenue sufficiency analysis for Fiscal Year (FY) ending 2017, we performed a detailed COSA analysis based upon principles outlined by the American Water Works Association (AWWA) and other generally accepted industry practices in order to allocate the cost of providing service to the components of the rate structure.

Rate Structure Analysis – The rate structure analysis phase developed specific rates that would recover the identified level of required revenue for each service. The recommended rate schedules were designed to ensure that the City’s water and sewer rates conform to accepted industry practices and reflect the appropriate distribution of system costs, while achieving the City’s policy objectives, such as enhanced fiscal stability, to the greatest extent possible.

E2. REVENUE SUFFICIENCY ANALYSIS

The RSA evaluated the sufficiency of the Utility’s revenues to meet all of its current and projected financial requirements over a five-year projection period, and determined the level of any rate revenue increases necessary in each year of the projection period to provide sufficient revenues to fund all of its cost requirements. Working with City staff, we thoroughly discussed the base data and assumptions of the analysis, and reviewed several alternative funding scenarios for the water and sewer funds. Through this process, we identified the recommended financial management plan and associated plan of annual water and sewer rate revenue increases presented herein to address the current and projected cost requirements of the Utility.

Over the last few years, the revenues generated by the City’s water system have been insufficient to fund utility costs due to significant reductions in annual water usage as a result of the recent drought and the subsequent conservation efforts. The City has seen water usage decline by nearly 30 percent over the past three years, which directly impacts water utility rate revenues. At the same time, the City’s cost of providing water service have not fallen proportionately with the reduction in rate revenue due the fact that the City’s operating costs are largely fixed, including the City’s water purchase costs. If additional revenues are not generated within the water system, the City will be at risk of defaulting on debt covenants and jeopardize its ability to purchase water and execute critical infrastructure repair projects. Fortunately, the sewer system is not in the same financial position as the water system.

The sewer system is currently generating revenues sufficient to fund the operations of the system. However, over the next five years additional revenue will be required to address the increasing cost of providing sewer service, including purchased wastewater treatment services and to provide funds for repair and replacement of the sewer system.

The recommended financial management plan and corresponding plan of water and sewer rate revenue adjustments are based upon the revenue and expense information, beginning balances, and assumptions as described in the full report. The specific five-year rate revenue adjustment plan recommended herein is presented in the following table. It is important to note that the FY 2017 revenue increases are achieved within recommended rate structure adjustments identified in the cost of service and rate design phases of the Study.

Table E.1: Recommended Plan of Water & Sewer Rate Revenue Increases

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Effective Date:	1/1/2017	7/1/2017	7/1/2018	7/1/2019	7/1/2020
Water Rate Revenue Increases	15.00%	12.00%	11.00%	10.00%	2.00%
Sewer Rate Revenue Increases	0.00%	0.00%	5.50%	5.50%	5.50%

E3. COST-OF-SERVICE ALLOCATION

A COSA analysis was completed for the study to identify the cost of providing water service including fixed, variable and system peaking costs. The Study employed the “base-extra capacity” cost-of-service method promulgated in AWWA’s Manual M1: Principles of Water Rates, Fees, and Charges (M1) for the water system, whereby costs are first allocated to individual functions or activities then the costs of each function are distributed to appropriate system parameters to allow for allocation to specific components of the rate structure. The COSA analysis was completed *only for the water system* based on the fact that the City’s current sewer rate structure is functioning appropriately with an appropriate level of fixed cost recovery.

E4. RATE STRUCTURE ANALYSIS

Upon completion of the COSA analysis, a rate structure analysis was performed to identify potential rate structure modifications and specific rate schedules for implementation in FY 2017 that would:

- i. Fairly and equitably recover each fund’s current cost of providing service and revenue requirements;
- ii. Conform to accepted industry practice and legal requirements;
- iii. Provide fiscal stability and recovery of fixed costs of the system; and
- iv. Maintain affordability to low volume and average users to the extent possible.

Water Rates

The City’s current water rate structure consists of a fixed monthly charge and a variable usage charge based on metered water usage. The fixed monthly charge portion of the water rate structure currently generates approximately 30% of the revenues for the water system with the remaining 70% is generated from the usage charge. To enhance the revenue stability within the water fund, an alternative water rate structure was developed based on the results of the COSA analysis. The recommended structure includes the following:

Fixed Monthly Charges - The Study proposes a fixed monthly charge that recovers the cost of customer service, billing and system peaking costs. Based on this level of cost recovery the fee would generate 46% of the revenues for the water fund enhancing revenue stability within the water fund and recovering an increased portion of the fixed cost of providing water service.

Usage Charges - The Study recommends that the City continue to charge for metered water utilizing a uniform rate for all customers. The usage charges will generate 54% of the revenues from the water system.

In addition to the standard water rates, the Study reviewed the current private fire protection charges assessed by the City. The cost of providing this service was determined as part of the COSA analysis and

an alternative fee structure is proposed to provide a more equitable fee which comports with industry standards.

The study also provides an analysis of drought surcharge rates for the water system. The surcharge rates were examined in light of the City's Emergency Water Conservation Program and could be enacted at the City Council's discretion in response to future drought conditions in the City. The full discussion of the drought rates are presented in the body of this report.

The recommended water rates summarized in the following tables are intended for implementation on 1/1/17 and embody the recommended rate revenue increase of 15% identified in the RSA. The full report provides a complete schedule of water (and sewer) rates for the period of FY 2017 to FY 2021.

Recommended Water Rates for FY 2017 (Effective January 1, 2017)

Water Monthly Service Charge		Private Fire Service	
<u>Meter Size</u>	<u>Monthly Charge</u>	<u>Service Connection Size</u>	<u>Monthly Charge</u>
3/4"	\$35.74	2"	\$36.48
1"	\$53.09	3"	\$37.88
1 1/2"	\$124.04	4"	\$40.29
2"	\$159.55	6"	\$48.96
3"	\$417.94	8"	\$63.92
4"	\$744.95	10"	\$86.42
6"	\$1,771.94	12"	\$117.59
8"	\$2,843.06		
10"	\$4,497.90		
12"	\$7,393.83		
		Consumptive Rate	
		Rate (\$ per hundred cubic feet)	\$2.12

Sewer Rates

The current sewer rate structure was reviewed and deemed appropriate given the services provided by the City. The current sewer fixed monthly charge generates approximately 71% of the sewer system revenues providing revenue stability and a relatively high level of fixed cost recovery. As demonstrated in the recommended financial plan no adjustments to sewer rates are required until FY 2019. The five-year forecast of sewer rates are presented in the body of this report.

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1. INTRODUCTION

Hawksley Consulting Inc., has been retained by the City of Norco (City) to conduct a comprehensive Water & Sewer Rate Study (Study) for the Water and Sewer Enterprise Funds that comprise the City's combined utility system (Utility). This report describes in detail the assumptions, procedures, and results of the Study, including our conclusions and recommendations.

1.1 OBJECTIVES

The primary objectives of this Study is to:

- i. Develop a multi-year financial management plan for each fund that identifies future rate adjustments to water and sewer rates that will ensure adequate revenues to meet the ongoing financial requirements of each fund;
- ii. Integrate the capital funding needs per the City's adopted Capital Improvements Plan for the Utility including evaluation of appropriate funding levels and sources of funds;
- iii. Identify appropriate cash reserve levels for each fund to provide financial stability and resiliency within the Utility; and
- iv. Recommend specific rate structures that equitably recover the cost of service, increase revenue stability and conforms with industry practices and legal requirements.

1.2 GENERAL METHODOLOGY

This section presents our methodology used to conduct the Study. To begin the Study, we first evaluated multiple financial management planning scenarios for each fund that determined the level of annual revenue required to satisfy projected annual operating, debt service (including coverage), and capital cost requirements as well as maintain adequate reserves. This portion of the Study was conducted using the revenue sufficiency and financial planning module of our FAMS-XL modeling system. We customized two separate versions of our module to reflect the financial dynamics and most current data available for the water and sewer funds, respectively, in order to develop the long-term financial management plan scenarios, inclusive of projected annual revenue requirements and corresponding annual rate adjustments, for each respective fund. The financial management plans were reviewed with City staff and a recommended multi-year financial management plan was developed for each fund.

Using the cost of providing service and net revenue requirements from the revenue sufficiency analysis for Fiscal Year (FY) ending 2017, we then performed a detailed cost-of-service allocation (COSA) analysis based upon principles as outlined by the American Water Works Association (AWWA) and other generally accepted industry practices in order to determine the various components of providing water service including billing, customer service, average day (base capacity) and system peaking costs.

Once all FY 2017 costs and revenue requirements were allocated to the system cost components, we then developed specific rates that would recover the identified costs. The recommended rate schedules presented herein are designed to ensure that the City's water and sewer rates conform to accepted industry practice and reflect the appropriate distribution of system costs, while achieving the City's policy objectives, such as fiscal stability and resiliency, to the greatest extent possible. Using this approach, we were able to clearly identify and review the impacts of the results of the rate structure presented herein for the City's customer base.

1.3 ACRONYMS

AWWA	American Water Works Association
CIP	capital improvement plan
COSA	cost-of-service allocation
FAMS-XL	Financial Analysis and Management System model
FTE	full time equivalent (employee)
FY	fiscal year ending June 30
GPCD	gallons per capita per day
HCF	hundred cubic feet
TGAL	thousands of gallons
TGPD	thousands of gallons per day
MGD	millions of gallons per day
O&M	operation and maintenance
RSA	revenue sufficiency analysis

2. REVENUE SUFFICIENCY ANALYSIS

This section presents the financial management plan scenarios and corresponding plan of water and sewer rate adjustments developed in the revenue sufficiency analysis (RSA) that was conducted as part of the Study. This section presents a description of the source data, assumptions, and policies reflected in the RSA, as well as the results of the RSA. **Appendix A** includes detailed schedules supporting the financial management plan identified herein for each respective fund.

During the RSA we reviewed alternative multi-year financial management planning scenarios and corresponding water and sewer rate revenue adjustment plans through several interactive work sessions with City staff. As an outcome to this process, the Study has produced a recommended financial management plan and corresponding plan of annual rate revenue adjustments that will allow each fund to meet its respective revenue requirements and financial performance objectives throughout the projection period.

2.1 DATA & ASSUMPTIONS

The City provided historical and budgeted financial information regarding the operation of the water and sewer utilities, including each fund's adopted multi-year capital improvement programs (CIP) and current debt service obligations and covenants. City staff also assisted in providing other assumptions and policies, such as demands and customer growth, debt coverage levels, levels of operating reserves, earnings on invested funds, and escalation rates for operating costs. The following presents the key source data relied upon in conducting the RSA.

2.1.1 BEGINNING FUND BALANCES

The ending balances for FY 2016 was used to establish the beginning FY 2017 balances for both the Water Fund and the Sewer Fund¹. The basis of the FY 2017 beginning balances used in the RSA are provided in **Schedule 1-W** (for water) and **Schedule 1-S** (for sewer). The City maintains a separate revenue fund and a capital fund within both the water and sewer funds. The revenue fund within the water system is fully depleted as of the end of FY 16. The water fund maintains a balance of nearly \$4.8 million in the capital fund which is designated for capital projects. As of the end of FY 16, the sewer fund maintained approximately \$4.5 million its revenue fund and \$3.2 million in the sewer capital fund.

2.1.2 GROWTH

Based upon a review of recent historical trends and discussions with City staff, the RSA assumes a customer growth rate of 0.5% (approximately 50 new connections per year) over the projection period for both the water and sewer systems. The City has experienced a significant reduction in metered water usage over the past three years in response to drought conditions in the State of California and subsequent

¹ File source: TrialBalanceListingFY15-16.xlsx

conservation efforts. Water usage has decreased nearly 30 percent since FY 2014. Based on our experience, it is unlikely that the City will experience a return to historical usage levels. Once customers make adjustments to water usage patterns, the usage levels typically become ingrained within the community. As a result, while we believe there will be a slight increase in FY 2017 usage levels of 5%, the RSA assumes a 0% growth in customer usage from existing customers in the future years of the projection period. The only growth in usage in future years would be a result of additional customers within the systems.

2.1.3 REVENUES

The revenues utilized in the RSA reflect an evaluation of multiple years of historical results from FY 2012 through FY 2016, FY 2017 Budget amounts, and historical billing information. Revenues consist of rate revenue, interest income, a one-time estimated revenue in the water fund for the sale of excess carryover storage water from the Chino Basin and other minor revenue from miscellaneous service charges. Rate revenue is based upon FY 2016 billing statistics and the recommended rate structure presented herein, adjusted to reflect changes in revenue based upon assumed customer growth. Projections of all other revenues were based upon the FY 2017 Budget, excluding interest income (which was calculated annually based upon projected average fund balances and assumed interest rates). The FY 2017 estimated rate revenue, as well as forecasts for all other non-rate revenues are provided in **Schedule 2-W** (for water) and **Schedule 2-S** (for sewer).

2.1.4 OPERATING EXPENSES & EXISTING DEBT

The water and sewer utilities' operating expenses include all operating and maintenance expenses, water purchases, wastewater treatment services, transfers, debt service requirements, and minor capital outlay. Future operating expenses were projected based upon the individual expense categories and expense amounts in the FY 2017 Budget, adjusted per discussions with City staff to reflect known and measurable changes (increases in administrative overhead in future years, one-time FY 2017 expenditures), as well as expected inflation (see Section 2.1.5).

The Water Fund and Sewer Fund both have existing debt service and loans that are payable during the projection period. The remaining annual debt service expenses for outstanding debt and loans were included in the RSA and are identified in **Schedule 3-W** (for water) and **Schedule 3-S** (for sewer).

2.1.5 COST ESCALATION

Annual cost escalation factors for the various types of operating and maintenance expenses were developed based upon a review of historical trends, our industry experience, and detailed discussions with City staff. The specific escalation factors assumed for the various categories of expenses are provided in **Schedule 4-W** (for water) and **Schedule 4-S** (for sewer) of Appendix A.

2.1.6 CAPITAL IMPROVEMENT PROGRAM

City staff provided the adopted five-year Capital Improvement Program for the water and sewer system for FY 2017 through FY 2021, reflecting the capital improvement needs identified for each respective fund. Beginning in FY 2018, the RSA includes an annual cost inflation factor of 3.0% (based upon recent

increases observed in the Engineering News Record Construction Cost Index) to account for the inflation in the future cost of construction.

In total, the CIP (excluding inflation) from FY 2017 – FY 2021 is approximately \$26.8 million for the water fund and is \$16.7 million for the sewer fund. A detailed list of projects and costs by year per the City's adopted CIP are provided in **Schedule 5-W** (for water) and **Schedule 5-S** (for sewer) in Appendix A.

2.1.7 INTEREST EARNINGS ON INVESTED FUNDS

The RSA reflects interest earnings on invested funds at a rate of 0.25% in FY 2017, 0.50% in FY 2018, 0.75% in FY 2019, 1.00% in FY 2020, and 1.25% in FY 2021.

2.1.8 MINIMUM OPERATING RESERVE BALANCE

Reserve balances for utility systems are funds set aside for a specific cash flow requirement, financial need, project, task, or legal covenant. The rationale related to the maintenance of minimum reserves is twofold. First, it helps to assure a utility that it will have adequate funds available to meet its financial obligations during the year, serving as a working capital reserve. Second, it provides funds that can be used for minor emergency repairs or replacements to the system that can occur as a result unanticipated system failures.

The City of Norco currently maintains a policy that its' utility funds should maintain a minimum operating fund balance of 3 months of annual O&M expenses within each fund to provide a working capital balance within each fund. The City maintains these funds within a designated revenue funds within each of the water and sewer funds. Given the financial condition of the water system, the revenue fund for water currently is completely depleted, while the sewer fund does have operating reserves at this target within its revenue fund. The financial management plans presented in this report assumes that the City will gradually establish a revenue fund reserve for the water fund over the five-year projection period. Additionally the financial management plan was developed to ensure that the sewer fund operating reserve does not fall below the target of 3 months of annual O&M.

2.1.9 RATE STABILIZATION RESERVE

In addition to operating reserves it is fairly common for utilities to maintain rate stabilization reserves that provide funds for reductions in revenues or unplanned expenditures. The rate stabilization reserve would be used in future to help address issues like the current significant reduction of revenues in the water fund due to water conservation. Our financial management plan includes the gradual development of a rate stabilization reserve for the water fund with a target of \$2 million by FY 2026. The target balance was developed based on analysis of the potential reductions in revenues from future conservation efforts. A rate stabilization reserve is not recommended for the sewer fund due to the stability within the fund as result of the current sewer rate structure.

2.1.10 FUTURE BORROWING ASSUMPTIONS

As part of the development of the financial management plan scenarios, various approaches to funding the CIP were examined. One of the funding scenarios assumed the issuance of new debt to fund a portion of the City's adopted CIP.

Based upon discussions with City staff, any new debt anticipated to be issued during the projection period is assumed to carry the following terms:

- 30 year term, level debt service
- 2.0% cost of issuance
- Interest rate on debt: FY 17 4.0%, FY 18 4.25%, FY 19 4.50%, FY 20 4.75%, FY 21 5.00%
- Debt service reserve equal to one year of debt service

2.1.11 DEBT SERVICE AND COVERAGE

The Utility must maintain the following minimum debt service coverage requirements:

- Net revenue (gross revenue minus operating expenses) that is at least 1.10 times greater than the annual debt service requirement (i.e. the annual principal and interest payments) on its outstanding senior-lien debt.

This coverage requirement is a minimum requirement. To the extent the Utility is unable to meet this requirement, it could be found in technical default resulting in the Utility having its credit rating downgraded, which would affect the interest rate and terms of future financing initiatives. As a policy decision, utilities often measure revenue sufficiency and set rates based upon a higher coverage level so as to ensure compliance with these covenants in the event future projections of revenue and expenses do not occur as predicted. To ensure the Utility maintains its current rating, the financial management plans presented in this report were designed to achieve target debt service coverage of at least 1.50 times net revenue. Per recently published guidance from Fitch Ratings², the municipal utility ratings agency, utility systems with *Midrange* financial profiles maintain debt service coverage greater than 1.50 times net revenue and those with *Stronger* financial profiles maintain debt coverage greater than 2.00 times net revenue.

2.1.12 SUMMARY OF ASSUMPTIONS

A summary of annual assumptions regarding growth rates, interest earnings, operating budget execution percentages and reserve targets are provided in **Schedule 6-W** (for water) and **Schedule 6-S** (for sewer) in Appendix A.

2.2 FINANCIAL PLANNING ANALYSIS

All of the above information was entered into two separate versions (one for each fund) of the financial module of our Financial Analysis and Management System (FAMS-XL) interactive modeling system. This module of FAMS-XL produced a five-year projection of the sufficiency of each fund's revenues to meet all current and projected financial requirements, and determined the level of rate revenue increases necessary in each year of the projection period to provide sufficient revenues for each fund's cost requirements.

² As published on July 31, 2013.

The revenue sufficiency and financial planning module of FAMS-XL utilizes all projected available funds in each year of the projection period to pay for capital projects. The model is set up to reflect the rules of cash application as defined and applied by City staff, and it produces a detailed summary of the funding sources to be used for each project in the CIP.

2.3 FINANCIAL PLANNING SCENARIOS

Based upon the data, assumptions, and policies presented herein, the City's current water and sewer rates will not provide sufficient revenue to meet each fund's respective revenue requirements over the five-year project period. In recent years the City's revenues have not been sufficient within the water fund to meet annual operating costs of the water system, should the City maintain a "status quo" approach and not increase water and sewer rates going forward, each fund will not be able to meet its' financial obligations. If this persists, the Utility will default on its bond covenants, be unable to purchase water and wastewater treatment services and will exhaust all existing cash within the water and sewer funds. The water fund currently has exhausted its operating fund cash balance and if not for a transfer from the water capital fund and the sale of excess carryover water the operating fund balance would be negative in the current fiscal year. If water rates are not adjusted going forward all cash (including the capital fund) will be exhausted within the water fund during FY 2018 resulting in a negative cash balance within the fund at the end of FY 2018. While the sewer fund maintains both an operating and capital fund balance, without future sewer rate adjustments all cash within the sewer fund the sewer fund will be exhausted by FY 2020. It is important to note that for the water system, current water revenues are not sufficient to meet annual operating and maintenance costs and debt service payments. Therefore adjustments are required just to meet basic system requirements excluding any system capital reinvestments.

To address the revenue shortfalls in each fund, multiple financial planning scenarios were developed and reviewed with City staff. All of the scenarios evaluated assumed that the City would increase revenues necessary to meet the annual operating and maintenance, debt service and reserve requirements to ensure that the water and sewer funds remain financial viable. The primary variable considered in the development of the scenarios included the funding of the City's adopted CIP, specifically the execution level of the CIP and the funding source. The specific scenarios that were evaluated include the following:

- Scenario 1: Full execution of the City's adopted CIP without the issuance of debt
- Scenario 2: Full execution of the City's five-year CIP with the issuance of debt in FY 2019 to fund a portion of the water and sewer CIP
- Scenario 3: Extension of the five-year CIP to a ten-year plan without the issuance of debt

Each of the scenarios was evaluated to determine the required adjustments to water and sewer rates to meet the funding requirements for each fund. A summary of the results of the financial planning scenarios for the water fund are shown in the table on the following page.

Table 1: Water Fund Financial Planning Scenarios

	FY 2017 ⁽¹⁾	FY 2018	FY 2019	FY 2020	FY 2021	Total
Annual Capital Funded (millions) ⁽²⁾						
Scenario 1	\$2.35	\$6.10	\$6.21	\$7.20	\$6.91	\$26.85
Scenario 2 ⁽³⁾	\$2.35	\$6.10	\$6.21	\$7.20	\$6.91	\$26.85
Scenario 3	\$2.35	\$2.50	\$2.50	\$2.50	\$2.50	\$12.35
Rate Increases						
Scenario 1	30.00%	30.00%	18.00%	8.50%	0.00%	86.50%
Scenario 2	14.00%	14.00%	14.00%	9.00%	9.00%	60.00%
Scenario 3	15.00%	12.00%	11.00%	10.00%	2.00%	50.00%
Customer Bill (Average Residential Customer) ⁽⁴⁾						
Scenario 1	\$88	\$114	\$134	\$146	\$146	
Scenario 2	\$77	\$88	\$101	\$110	\$120	
Scenario 3	\$78	\$87	\$97	\$107	\$109	

(1) Rate increases effective January 1, 2017 subsequent increases effective July 1 of each year through 2020

(2) Annual capital projects are shown in current dollars excluding inflation

(3) Assumes bond issue of \$21.4 million in FY 2019

(4) Average residential customer using 20 HCF per month

As demonstrated in the table, Scenario 1 (the full execution of the water system CIP without the issuance of debt) would require significant increases in water rates over the next several years. While the increases are less substantial under Scenario 2, this scenario would require the issuance of debt. The use of debt would increase the total cost to the City's customers over the long-term due to interest associated with the borrowing. Scenario 3 results in the lowest water rate increases but would not allow the City to execute the current full CIP over the next five years.

The same financial planning scenarios were developed for the sewer fund. A summary of the results are shown in the following table.

Table 2: Sewer Fund Financial Planning Scenarios

	FY 2017 ⁽¹⁾	FY 2018	FY 2019	FY 2020	FY 2021	Total
Annual Capital Funded (millions) ⁽²⁾						
Scenario 1	\$2.26	\$3.56	\$3.93	\$3.71	\$4.38	\$16.70
Scenario 2 ⁽³⁾	\$2.26	\$3.56	\$3.93	\$3.71	\$4.38	\$16.70
Scenario 3	\$2.26	\$1.76	\$1.76	\$1.76	\$1.76	\$9.31
Rate Increases						
Scenario 1	6.00%	6.00%	12.00%	12.00%	12.00%	48.00%
Scenario 2	0.00%	7.00%	7.00%	7.00%	7.00%	28.00%
Scenario 3	0.00%	0.00%	5.50%	5.50%	5.50%	16.50%
Customer Bill (Average Residential Customer)						
Scenario 1	\$54	\$57	\$64	\$72	\$81	
Scenario 2	\$51	\$55	\$58	\$62	\$67	
Scenario 3	\$51	\$51	\$54	\$57	\$60	

(1) Rate increases effective January 1, 2017 subsequent increases effective July 1 of each year through 2020

(2) Annual capital projects are shown in current dollars excluding inflation

(3) Assumes bond issue of \$7.5 million in FY 2019

Table 2 demonstrates the necessary level of rate increases for each scenario. The revenue increases in the sewer fund are less substantial than the water fund because of the current health of the sewer fund and the magnitude of the sewer CIP. As shown in the table, Scenarios 2 and 3 would allow the City to hold current sewer rates for a year or two prior to making any adjustments.

2.3.1 RECOMMENDED RATE INCREASES

The results of the financial planning scenarios for the water and sewer funds were reviewed with the City staff during an interactive work session. Based on the review, it was determined that the most appropriate approach for the City would be to move forward with Scenario 3 for both the water and sewer funds. This approach is recommended because it will allow the City to more gradually increase water and sewer rates and avoid interest expenses associated with issuance of debt, which would result in higher costs over the long-term for the City’s customers. The approach also is considered prudent given the current financial health of the water system. It should be noted that the level of capital investment the City will be undertaking with the execution of half of the CIP still represents a substantial increase in the level of investment in the water and sewer systems as compared to recent years. The funding level will allow the City to move forward with addressing critical water and sewer system capital needs associated with repair and replacement of system assets. Table 3 summarizes the recommended water and sewer rate increases identified over the next five years per the RSA that was conducted as described herein.

Table 3: Recommended Water and Sewer Rate Revenue Increase

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Effective Date:	1/1/2017	7/1/2017	7/1/2018	7/1/2019	7/1/2020
Water Rate Revenue Increases	15.00%	12.00%	11.00%	10.00%	2.00%
Sewer Rate Revenue Increases	0.00%	0.00%	5.50%	5.50%	5.50%

Appendix A of this report includes the following detailed schedules presenting components of the recommended financial management plan developed for the Utility.

- Cash flow Pro Forma - **Schedule 7-W** (for water) and **Schedule 7-S** (for sewer)
 - Revenues
 - Expenses
 - Cash balances
 - Debt service coverage
- FAMS model Control Panel - **Schedule 8-W** (water) and **Schedule 8-S** (sewer)
 - Summary of rate increases, debt coverage, and graphs of financial results
- Capital Funding Summary - **Schedule 9-W** (water) and **Schedule 9-S** (sewer)

3. COST-OF-SERVICE ALLOCATION

The previous section described the total rate revenue requirements of the water and sewer utilities. This section describes the cost-of-service allocation (COSA) analysis which identifies the specific cost drivers of providing service, which then forms the design of utility rates. The following section of this Report presents an overview of the COSA methodology utilized in the Study and corresponding results.

The COSA was completed *only for the water system* based on the fact that the City's current sewer rate structure is functioning appropriately as discussed in Section 4 of this report.

The purpose of a COSA analysis for this study was to determine the cost of providing water service by system function and component so that the costs could be allocated to the various aspects of the water rate structure. This Study employed well-established industry practices for these types of studies as recognized by the American Water Works Association (AWWA) and other accepted industry practices. Namely, this Study employed the "base-extra capacity" cost-of-service method promulgated in AWWA's Manual M1: Principles of Water Rates, Fees, and Charges (M1) for the water system, whereby costs are first allocated to individual functions or activities (such as supply, treatment, distribution, meters/services, etc.) then the cost of each function are distributed to appropriate system parameters (such as average day demands, max day demands, customers, etc.). System parameter costs were then used as a basis for the development of alternative water rate structures. It is important to note that we found very little difference in the cost to serve different customer types (such as single family homes, multifamily homes, commercial accounts, etc.). As such, this report espouses the City's current (and historic) practice of a single rate schedule for all customer classes. For this reason, a customer class specific COSA analysis was not completed as part of the rate study analysis.

3.1 PROCESS

The COSA analysis was based upon the water fund FY 2017 estimated expenditures and revenue requirements per the RSA, and included the following:

- ▶ Allocation of water system costs to the appropriate activities/functions (i.e. supply, distribution)
- ▶ Allocation of the costs of each function to specific system parameters (i.e. base capacity, customer)
- ▶ Allocation of the system parameter costs to the components of the rate structure (fixed and variable)
- ▶ Calculation of private fire protection service cost allocation

The following sub-sections present the COSA analysis results.

3.2 COMPONENTS OF THE ANALYSIS

As the City maintains separate enterprise funds for the water and sewer systems, no initial separation of expenses or revenue between systems was necessary for this Study. Therefore, the following presents the

key components or steps that were performed to distribute the expenses and revenue requirements of the water system to the system parameters and rate components.

3.2.1 FUNCTIONAL COST ALLOCATIONS

The operating expenses, debt service, and cash-funded capital requirements within the water system were distributed to specific activities or functional components of service. The functional components of the water system were identified as:

- ▶ Source of Supply
- ▶ Treatment
- ▶ Distribution
- ▶ Meters/Customer Services
- ▶ Fire Protection (public and private services)

A detailed process was followed for assigning expenses to the respective functional components that was reviewed with City staff. Tables 4 and 5 outline how the water system budgetary category costs were allocated to the functional components of the water system. Table 4 presents the major budgetary categories within the water fund budget and how the expenses were allocated. Table 5 presents a more granular view of the allocations and the various criteria that were used to allocate the costs to the system functional components.

Table 4: Basis of budget category allocations to water functional components

Human Resources	Based on estimate of FTEs serving each respective function
Fiscal & Support Services	Based on estimate of FTEs serving each respective function
Public Works Inspection	Based on estimate of FTEs serving each respective function
Engineering	Based on 5-Year spending by function
Water Division	Based on estimate of FTEs serving each respective function (excluding water purchases directly allocated to supply)
Transfers Out	Indirect (Less Water Purchase)
Debt Service	Directly allocated to functions based on nature of projects funded by existing debt
Indirect	Allocated to each function in proportion to the total operation and maintenance costs allocated to each function.

Table 5: Budget category allocations to water functional components

	Supply	Treatment	Distribution	Meters/Customer Service	Fire Protection
Basis/Factor	% Allocation				
Meter/Services	0.00%	0.00%	0.00%	100.00%	0.00%
Indirect	6.36%	57.65%	27.92%	5.39%	2.69%
Indirect (less Water Purchase)	12.78%	14.81%	56.16%	10.83%	5.41%
Treatment	0.00%	100.00%	0.00%	0.00%	0.00%
Supply	100.00%	0.00%	0.00%	0.00%	0.00%
Distribution	0.00%	0.00%	100.00%	0.00%	0.00%
Treatment/Distribution/Meters Split	0.00%	15.00%	75.00%	10.00%	0.00%
Supply/Treatment	50.00%	50.00%	0.00%	0.00%	0.00%
5 Year CIP Projects	37.52%	2.08%	59.19%	0.79%	0.42%
2017 CIP	18.64%	4.44%	69.82%	4.88%	2.22%
Fire Protection	0.00%	0.00%	0.00%	0.00%	100.00%
FTE	10.00%	10.00%	50.00%	20.00%	10.00%

3.2.2 DISTRIBUTE FUNCTION COSTS TO SYSTEM PARAMETERS

Next the costs of each functional component were distributed to system parameters. As shown in Table 6, the water system’s Supply costs are allocated entirely to the system’s Base Capacity (as measured by the Average Day), Meter/Services costs are assigned to the Customer parameter (as measured by the number of accounts), and Fire Protection is assigned to the Fire Protection parameter (as measured by hydraulic capacity).

Treatment costs are split between the Base Capacity and Extra Capacity – Max Day. This split is calculated based on the relative volume of an Average Day as compared to a Maximum Day (see Table 7). The logic is that the treatment system has been sized to be able to meet the demands associated with the average flows during a maximum day event.

Distribution costs are split between the system’s Base Capacity and Extra Capacity – Max Day as the distribution system has been sized to meet all system demands (i.e. average day and maximum day). It is important to note that a traditional COSA analysis will include peak hour demands. However peak hour demands are not available for the City system and therefore were excluded from the analysis. The allocation percentages shown in Table 6 are calculated based on the relationship of the system demand values shown in Table 7 identified as part of the City’s master plan efforts.

Table 6: Water System: Mapping Functional Components to System Parameters

Functional Component	Water System Parameters			
	Base Capacity (Average Day)	Extra Capacity (Max Day)	Fire Protection	Customers
Source of Supply	100%			
Treatment	65%	35%		
Distribution	65%	35%		
Meters/Services				100%
Fire Protection			100%	

Table 7: Water System Peaking Profile³

	Average Day (MGD)	Max Month (MGD)	Max Day (MGD)
Water System Demands	6.2	8.9	9.4

Next the water system’s functionalized costs for operating, existing debt service and cash-funded capital spending were allocated to system parameters based on the values shown in Table 6. The following table presents the resulting water system costs allocated to the system parameters for FY 17.

Table 8: Water System Costs Allocated to System Parameters

System Parameter	Water System Costs
Base Capacity	\$ 5,187,660
Extra Capacity - Max Day	\$ 3,503,205
Public and Private Fire Protection	\$ 282,379
Customer Service/Metering	\$ 565,678
Total	\$ 9,538,923

Once the water system costs were allocated to the system parameters the cost components could be utilized to determine an appropriate rate structure as discussed in the next section.

3.2.5 ALLOCATION OF SYSTEM PARAMETER COSTS TO RATE COMPONENTS

The water system parameter costs were reviewed to determine the appropriate allocation of each parameter to the components of the water rate structure. The costs associated with customer service and metering are typically recovered in the fixed monthly charge because the City will incur the costs regardless of metered water use. Similarly, the costs associated with providing public fire service can be recovered in the fixed charge because fire protection is a standby service and not related to actual metered water use. It should be noted that the portion of fire protection related to private fire service is determined in the next section of this report. The base capacity (or average day use in the water system) should be recovered in the variable “usage” portion of the water rate because it correlates directly to use. The final component, extra capacity, can be recovered in the fixed charge because the City must be prepared to meet the peak demands regardless of actual customer use. Table 9 summarizes the allocation of the system parameter costs to the fixed and variable components of the water rate structure.

³ Peaking values derived City of Norco Water Facilities Master Plan August 2016 – Krieger & Stewart Engineering Consultants. Actual demands are based on FY 2015 customer usage data.

Table 9: Allocation of System Parameter Costs to Rate Components

System Parameter	Water System Costs	Allocation	
		Fixed	Variable
Base Capacity	\$ 5,187,660	0%	100%
Extra Capacity - Max Day	\$ 3,503,205	100%	0%
Public and Private Fire Protection	\$ 282,379	100%	0%
Customer Service/Metering	\$ 565,678	100%	0%
Total	\$ 9,538,923	\$ 4,351,263	\$ 5,187,660
		46%	54%

The application of the system parameter costs to the rate components is discussed further in the rate structure portion of this report.

3.2.9 CALCULATION OF PRIVATE FIRE COST ALLOCATION

As shown in Table 9, the COSA analysis identified the cost of providing public and private fire protection within the City at \$282,379 in FY 2017. The majority of these costs are related to providing public fire service throughout the City. However, a portion of these costs are associated with properties that have private fire service providing fire service to their respective properties. The vast majority of these properties are commercial in nature. Fire protection costs are allocated based on the hydraulic capacity of the respective service sizes for each service. Table 10, shows the calculation of the allocation between private and public fire service. The private fire system accounts for 23% of the total fire system capacity, while the public fire system accounts for the remaining 77% (based upon the hydraulic capacity of the respective connection sizes for each service). This yields a cost allocation of \$65,310 to the private fire system, which needs to be collected through private fire protection fees to those customers with such service.

Table 10: Private vs. Public Fire Capacity Usage

	Number in Service	Demand Factor (1)	Equivalent Connections	Percent of Total Fire Protection Costs	Total
Public Fire Service					
Hydrants in Service	1,368	111.31	152,272		
Total Public Hydrants	1,368		152,272	77%	\$ 217,069
Private Fire Service					
Firelines in Service					
1"	-	1.00	-		
1 1/2"	-	2.90	-		
2"	-	6.19	-		
3"	-	17.98	-		
4"	38	38.32	1,456		
6"	168	111.31	18,700		
8"	74	237.21	17,553		
10"	19	426.58	8,105		
12"	-	689.04	-		
	299		45,815	23%	\$ 65,310
Total	1,667		198,087	100%	\$ 282,379

(1) Demand factor is based on the diameter of the line raised to the 2.63 power which represents the demand associated with the respective line size.

The private fire protection COSA analysis was used to determine the appropriate private fire protection charges which are discussed in the next section of this report.

4. RATE STRUCTURE ANALYSIS

A rate structure analysis then used COSA analysis results as a basis for recommending a rate structure and schedule that would:

- i. Fairly and equitably recover each fund's current cost of providing service;
- ii. Conform to accepted industry practice and legal requirements;
- iii. Provide fiscal stability and recovery of fixed costs of the system; and
- iv. Maintain affordability to low volume and average users to the extent possible

While all of the key goals for the rate structures were considered while evaluating rate structures, particular emphasis was placed on developing rate structures that would increase revenue stability within the Utility, given the recent revenue reductions in the water fund. The following sub-sections present a description of the basis of the recommended rate structure, specific rate schedules based upon the rate structure recommendations for implementation in FY 2017, as well as the customer impacts of the specific rates recommended for FY 2017.

4.1 WATER RATES

The following explains how the recommended water rates were designed in a manner such that they comply with the cost-of-service results and address the aforementioned rate structure objectives.

4.1.1 CURRENT WATER RATES

Common industry practice for water utilities is a two-part rate structure comprised of both fixed and variable charges. Generally accepted practice recovers a portion of the costs of the system in a fixed monthly readiness-to-serve charge, recognizing that utilities have substantial investments in capacity-related costs and other fixed costs that are incurred year-round to maintain a state of readiness to meet peak demands when they occur. The amount of cost recovery in fixed versus variable charges is unique to each community's balance of fiscal stability, philosophy regarding cost recovery, and level of fixed costs.

Consistent with standard industry practice, the City currently applies a water rate structure which is made up of two parts:

1. Fixed Monthly Charge; and
2. Uniform Usage Rates

The Fixed Monthly Charge is a charge that is the same for all customer classes and is assessed based on meter size. The Fixed Monthly Charge currently recovers 30% of the fund's rate revenue, which is a portion of the fixed costs of providing water service.

The Uniform Usage Rates are designed to recover the remainder (70%) of the water fund's fixed costs as well as its variable costs. As a result, the City is dependent on metered water usage for the generation of a significant portion of the required revenue for the water fund.

4.1.2 PROPOSED CHANGES TO WATER RATE STRUCTURE

The following presents the proposed changes to both the fixed and volumetric portions of the City's existing water rate structure.

4.1.1.1 Fixed Charges

Fixed costs are costs that the utility will incur, regardless of whether water is actually delivered to an account or not. In a sense, these are akin to "readiness-to-serve" costs. This Study considers two general categories of fixed costs: (1) the fixed costs associated with managing each water account (customer service, billing, administration) and (2) the fixed costs associated with the infrastructure needed to serve the account (distribution pipe, pumps, treatment facilities, etc.). As such, this Study proposes to establish a "Fixed Monthly Charge" that recovers customer service costs assessed on a per account basis and that recovers the fixed costs of providing infrastructure which will be assessed by meter and in proportion to the meter size (since the meter size reflects the amount of capacity that is prepared to serve the account).

4.1.2.2 Volumetric Charges

Based on the level of cost recovery from the Fixed Monthly Charge, the remaining revenues will be collected with the Uniform Usage Rate.

4.2 RECOMMENDED WATER RATES

The following explains how the cost-of-service results were used to calculate the proposed rates for each respective customer class.

4.2.1 FIXED MONTHLY CHARGE METHODOLOGY

As described in Section 3, this Study proposes to recover customer service costs and fixed infrastructure related costs associated with meeting the system peak demands within a Fixed Monthly Charge. In FY 2017 the customer service related costs within the water fund total \$565,678. The remaining costs allocated to the fixed monthly charge include those associated with providing system infrastructure to meet system peaking demands, including public fire protection. As shown on Table 9, in Section 3 of this report, the combination of the customer service costs and the fixed infrastructure costs total approximately \$4.3 million in FY 2017 which represents 46% of the total system revenue requirements. Utilizing this approach to set the monthly fixed charge would increase the level of fixed cost recovery in the water fund from 30% to 46% providing increased revenue stability within the fund.

4.2.2 UNIFORM USAGE RATE METHODOLOGY

After the fixed charges have been calculated, the remaining cost to provide service is collected through the volumetric rates ("Uniform Usage Rate"). The uniform usage rates would recover the remaining 54% of the water fund revenues on an annual basis.

4.2.4 RECOMMENDED WATER RATES

Based upon the results of the COSA analysis, the features of the recommended rate structure described herein, as well as the recommended financial management plan outlined as Scenario 3, we have prepared

the following schedule of water rates. The recommended rates are summarized in Table with the first rate adjustment in FY 2017 effective January 1, 2017 and each subsequent year on July 1, through 2020.

Table 11: Recommended Water Rates

	Current	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Fixed Monthly Charge						
3/4"	\$20.87	\$35.74	\$39.42	\$43.27	\$47.10	\$47.80
1"	\$33.12	\$53.09	\$58.54	\$64.26	\$69.96	\$71.01
1 1/2"	\$83.23	\$124.04	\$136.75	\$150.14	\$163.48	\$165.95
2"	\$108.31	\$159.55	\$175.90	\$193.13	\$210.29	\$213.47
3"	\$290.80	\$417.94	\$460.73	\$505.88	\$550.86	\$559.23
4"	\$521.75	\$744.95	\$821.21	\$901.69	\$981.87	\$996.81
6"	\$1,247.06	\$1,771.94	\$1,953.30	\$2,144.75	\$2,335.48	\$2,371.04
8"	\$2,843.06	\$2,843.06	\$3,134.02	\$3,441.22	\$3,747.24	\$3,804.31
10"	\$3,172.60	\$4,497.90	\$4,958.21	\$5,444.23	\$5,928.38	\$6,018.68
12"	NA	\$7,393.83	\$8,150.49	\$8,949.43	\$9,745.30	\$9,893.75
Usage Charge						
Rate (per HCF)	\$2.22	\$2.12	\$2.22	\$2.44	\$2.66	\$2.70

4.2.5 PRIVATE FIRE PROTECTION CHARGES

Based on the results of the COSA analysis, private fire protection charges were calculated. The City currently assess private fire protection charges as a fixed monthly charge equivalent to the fixed monthly charge for a water customer with a 3/4" meter, currently \$20.87. While it is common to assess private fire protection charges as a fixed charge, most communities assess the charge based on the size of fire service serving the property. This approach recognizes the differences in potential demand that can be placed on the water system (associated with the size of the service line) and the resulting cost of being ready to provide the service when needed. We recommend that the City adopt new private fire protection charges using this industry standard approach at a level that recovers the cost of providing service identified in the COSA analysis. The proposed private fire protection charges are presented in Table 12 with the first rate adjustment in FY 2017 effective January 1, 2017 and each subsequent year on July 1, through 2020.

Table 12: Recommended Private Fire Protection Charges

Fire Line Size	Current	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
2"	\$20.87	\$36.48	\$40.85	\$45.35	\$49.88	\$50.88
3"	\$20.87	\$37.88	\$42.42	\$47.09	\$51.80	\$52.83
4"	\$20.87	\$40.29	\$45.13	\$50.09	\$55.10	\$56.20
6"	\$20.87	\$48.96	\$54.84	\$60.87	\$66.96	\$68.30
8"	\$20.87	\$63.92	\$71.59	\$79.46	\$87.41	\$89.16
10"	\$20.87	\$86.42	\$96.79	\$107.43	\$118.17	\$120.54
12"	\$20.87	\$117.59	\$131.71	\$146.19	\$160.81	\$164.03
Usage Charge						
Rate (per HCF)	\$4.44	\$4.24	\$4.44	\$4.88	\$5.32	\$5.40

4.2.6 DROUGHT SURCHARGE RATES

One of the key objectives of this Study was to develop a financial plan, rate structure and policies that will help to enhance the stability and resiliency of the water fund. The development of appropriate reserves and a rate structure that will provide additional fixed revenues will help to meet this objective. To further enhance the stability of the water fund, the City could adopt drought surcharge rates like many other communities in California.

Pursuant to State law and recognizing that water is our most vital resource, the City has adopted Emergency Water Conservation that addresses specific “stages” of action to be undertaken in response to the eventuality of various water shortage conditions. The City’s Emergency Water Conservation Program establishes five water shortage stages (each a “Level”) and associated conservation mandates to reduce unreasonable and wasteful water use and preserve the City’s water supplies. As the writing of this Report, the City is currently in a Level 1 response level. Should future drought conditions require the City to move to another Level which may require additional conservation, the resulting reductions in water usage will reduce revenues in the water fund. To address the potential future reductions in revenues the City Council may elect to enact drought rates during each respective Level as a means to stabilize rate revenues. It should be noted that the surcharge rates would be assessed to all metered water usage. Based on the conservation target associated with each Level identified in the City’s Emergency Water Conservation Program, a specific surcharge rate was determined. The calculated drought surcharge rates are presented in Table 13.

Table 13: Recommended Drought Surcharge Rates

Water Shortage Response Level	Conservation Target	Drought Surcharge
Level 1	0%	\$-
Level 2	20%	\$0.37
Level 3	30%	\$0.71
Level 4	40%	\$1.14
Level 5	>50%	\$1.73

It is important to note that the drought surcharge rates would only be enacted as deemed necessary by the City Council. While the City may never need to enact the surcharges, having the ability to implement them if necessary would allow the City to quickly address unforeseen revenue shortages due to mandatory conservation in the future.

4.3 SEWER RATES

The City currently charges all sewer accounts a fixed monthly charge of \$51.00. In addition, non-residential accounts including schools, governmental, industrial, commercial and multi-family residential (4 individual living units or more) are charged a sewer rate per HCF for all metered water usage over 10 HCF. The current monthly fixed charge generates approximately 71% of the total sewer fund revenues. While the fixed costs of operating the sewer system exceed this value the current structure provides a significant level

of revenue stability and fixed cost recovery. Based on our review of the current rate structure we recommend that the current structure remain in place with rate adjustments as outlined in our recommended financial management plan for the sewer fund. In addition to the active sewer accounts the City has installed laterals to parcels throughout the City that have not yet connected to the sewer system. These parcel owners are assessed a non-connect fee intended to recover the investment in and maintenance of infrastructure required to provide the available sewer service. The non-connect fees should be adjusted consistent with the financial management plan to ensure that the fee continues to recover the cost of making sewer service available.

The recommended sewer rates are summarized in Table 14 and are intended to generate the revenues identified in the financial management plan for the sewer fund. As demonstrated in the table, sewer rates and fees will not adjust until FY 2019 (effective July 1, 2018 with adjustments on July 1 of each subsequent year through 2020).

Table 14: Recommended Sewer Rates

	Current	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Monthly Fixed Charge	\$51.00	\$51.00	\$51.00	\$53.81	\$56.77	\$59.89
Sewer Usage Charge						
Rate (per HCF)	\$8.00	\$8.00	\$8.00	\$8.44	\$8.90	\$9.39
Monthly Non-Connect Fee	\$19.00	\$19.00	\$19.00	\$20.05	\$21.15	\$22.31

* Monthly Fixed Charge applies to all customer classes

** Sewer Usage Charge excludes single family and irrigation customer classes

*** Monthly Non-Connect Fee is for single family residential on septic

4.4 CUSTOMER IMPACT ANALYSIS

As part of this Study, a bill impact analysis was conducted to better understand the changes that the recommended rate modifications would have on the monthly bills of various types of customers. In Table 15 a bill impact analysis is shown for Single Family Residential customers with a 3/4" water meter and varying degrees of water usage. As highlighted in the table the average residential customer in the City uses approximately 20 HCF per month. Table 16 shows the bill impact analysis for Commercial customers with a 1" water meter and varying degrees of water usage. It should be noted that 3/4" and 1" metered customers account for 96% of the total number of accounts served by the City.

Table 15: Bill Impact Analysis, Single Family Residential with 3/4” Meter

Monthly Use (HCF)	Number of Bills	Cumulative % of Bills	Current Bill	Proposed Bill (FY17)	\$ Change
5	2,328	12.90%	\$83	\$97	\$14
10	2,689	34.50%	\$94	\$108	\$14
15	2,105	53.60%	\$105	\$119	\$13
20	1,538	67.90%	\$116	\$129	\$13
25	1,007	77.90%	\$127	\$140	\$12
30	726	84.70%	\$138	\$150	\$12
35	511	89.50%	\$150	\$161	\$11
40	324	92.60%	\$161	\$171	\$11

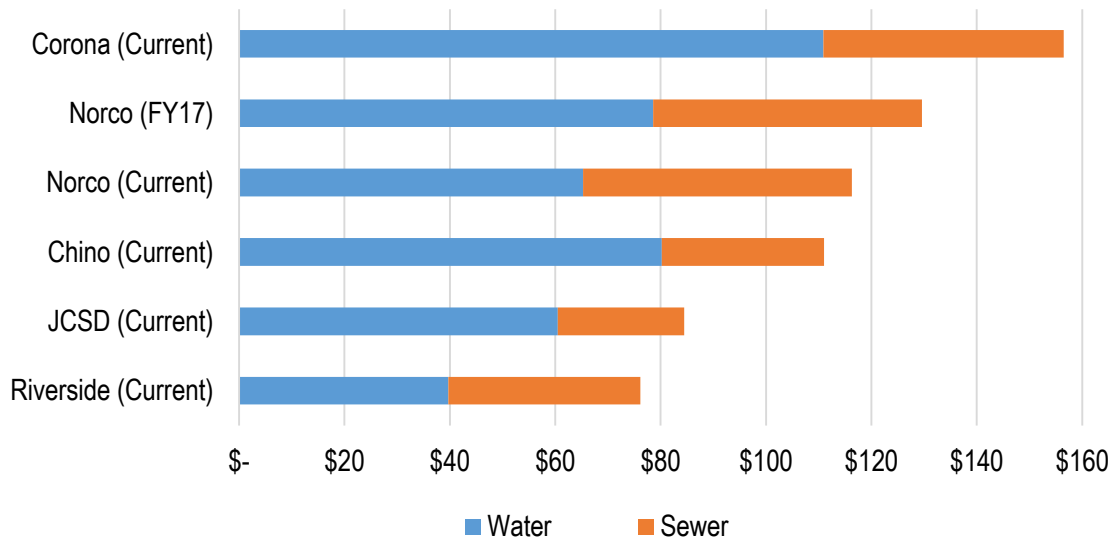
Table 16: Bill Impact Analysis, Commercial Customer with 1” Meter

Monthly Use (HCF)	Number of Bills	Cumulative % of Bills	Current Bill	Proposed Bill (FY17)	\$ Change
5	104	44.13%	\$95	\$115	\$19
10	39	58.17%	\$106	\$125	\$19
15	23	66.43%	\$157	\$176	\$18
20	29	72.54%	\$209	\$226	\$18
25	16	77.79%	\$260	\$277	\$17
30	7	81.90%	\$311	\$328	\$17
35	15	84.81%	\$362	\$378	\$16
40	15	88.25%	\$413	\$429	\$16
45	10	90.11%	\$464	\$479	\$15
50	3	91.88%	\$515	\$530	\$15
55	6	93.55%	\$566	\$581	\$14

4.5 COMPARISON TO LOCAL UTILITIES

To provide a comparison of the relative charges for water and sewer service in the City of Norco compared with surrounding communities, a bill survey was completed. While the comparison provides insight to local charges between communities it is important to note that there are a host of factors that make it difficult to provide a true “apples to apples” comparison. Each community has differing economies of scale, purchase water costs, vintage of infrastructure, outside funding sources and many other factors. Figure 1 on the following page presents the comparison. It is important to note that each monthly bill in the survey was calculated based upon current FY 2016 water and sewer rates. It is very likely that the majority of entities surveyed will be implementing rate increases in the coming years.

Figure 1: Residential Customer Monthly Bill Comparison (20 HCF per Month)



APPENDIX: REVENUE SUFFICIENCY ANALYSIS SCHEDULES

Water Fund - Beginning Balances as of July 1, 2016

Schedule 1-W

Fund Balance Detail ⁽¹⁾	Revenue Fund	Water Capital Fund
Current Unrestricted Assets		
Cash and Cash Equivalents	\$ (750,854)	4,856,710
Receivables	1,731,212	17,752
Utility Overpayment	(28,943)	-
Total Assets	\$ 951,415	4,874,461
Less: Accounts Payable	\$ (776,552)	(31,283)
Less: Other Payables	(117,483)	-
Less: Retention Payable	-	(63,297)
Calculated Fund Balance (Assets - Liabilities)	\$ 57,380	4,779,882
Plus/(Less):	-	-
Net Unrestricted Fund Balance	\$ 57,380	4,779,882
Funds Encumbered or Reserved for Projects not in the CIP	-	-
Working Capital	57,380	4,779,882
Total Available Funds		\$ 4,837,261

(1) Beginning Fund balance was provided by City staff based on FY116 audited year end balances.

Water Fund - Projection of Cash Inflows

Schedule 2-W

	FY 2017 Budget	FY 2018 Budget	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Water Rate Revenue					
Water Sales - Fixed Monthly Charges	\$ 2,841,455	3,423,445	3,819,024	4,221,931	4,327,901
Water Sales - Usage Charges	6,070,254	7,197,057	7,900,858	8,604,034	8,758,563
Total Water Rate Revenue	\$ 8,911,709	10,620,502	11,719,881	12,825,965	13,086,464
Other Operating Revenue ⁽¹⁾					
Energy Pass Thru	\$ 83,326	83,326	83,326	83,326	83,326
Bulk Water	27,000	27,000	27,000	27,000	27,000
Reconnection & Coll. Fees	7,200	7,200	7,200	7,200	7,200
Other Service Fees	207,233	207,233	207,233	207,233	207,233
Transfer In from Water Capital Fund	709,727	-	-	-	-
Sale of Water	1,000,000	-	-	-	-
Total Other Operating Revenue	\$ 2,034,486	324,759	324,759	324,759	324,759
Interest Earnings ⁽²⁾					
Interest Income	\$ 924	5,677	10,849	15,624	25,769
Total Interest Earnings Revenue	\$ 924	5,677	10,849	15,624	25,769
Capital Project Funding Sources ⁽³⁾					
Silverlakes Loan Payment	\$ 76,219	80,840	85,741	90,938	96,451
Loan Interest	210,979	206,358	201,458	196,260	190,747
Development Impact Fees	244,937	246,161	247,392	248,629	249,872
Total Capital Project Funding Sources	\$ 532,135	533,360	534,591	535,828	537,071
Total Cash Inflows	\$ 11,479,253	11,484,297	12,590,080	13,702,176	13,974,062

(1) Unless otherwise specified, FY 2017 other operating revenues are per the FY 2017 Preliminary Budget, respectively.

(2) Interest Income is calculated based off annual total fund balance at the beginning of each fiscal year and restricted fund amounts

Water Fund - Projection of Cash Outflows

Schedule 3-W 1 of 4

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Department 703 - Human Resources					
Personal Services					
Full Time Salaries	\$ 8,676	9,023	9,384	9,759	10,150
PERS Retirement	955	993	1,033	1,074	1,117
PERS Monthly Employer UAL Payment	2,503	2,603	2,707	2,816	2,928
Employee Group Insurance	859	936	1,021	1,112	1,213
Cell Phone Stipend	72	75	78	81	84
Medical Savings Account	29	30	31	33	34
FICA/Medicare Insurance	126	131	136	142	147
Sick Leave Buy Back	175	182	189	197	205
Annual Vacation Cash Out	160	166	173	180	187
Tuition Reimbursement	96	100	104	108	112
Total Personal Services Expenses	\$ 13,651	14,240	14,856	15,502	16,177
Department 706 - Fiscal & Support Services					
Personal Services					
Full Time Salaries	\$ 165,495	172,115	178,999	186,159	193,606
PERS Retirement	16,020	16,661	17,327	18,020	18,741
PERS Monthly Employer UAL Payment	33,504	34,844	36,238	37,687	39,195
Employee Group Insurance	36,797	40,109	43,719	47,653	51,942
Vehicle Allowance	1,200	1,308	1,426	1,554	1,694
Cell Phone Stipend	150	156	162	169	175
Medical Savings Account	267	278	289	300	312
FICA/Medicare Insurance	2,400	2,496	2,596	2,700	2,808
Sick Leave Buy Back	2,400	2,496	2,596	2,700	2,808
Annual Vacation Cash Out	2,500	2,600	2,704	2,812	2,925
Total Personal Services Expenses	\$ 260,733	273,062	286,055	299,755	314,205
Department 740 - Public Works Inspection					
Personal Services					
Full Time Salaries	\$ 15,349	15,963	16,601	17,266	17,956
PERS Retirement	1,690	1,758	1,828	1,901	1,977
PERS Monthly Employer UAL Payment	4,428	4,605	4,789	4,981	5,180
Employee Group Insurance	3,984	4,343	4,733	5,159	5,624
FICA/Medicare Insurance	223	232	241	251	261
Sick Leave Buy Back	275	286	297	309	322
Annual Vacation Cash Out	75	78	81	84	88
Total Personal Services Expenses	\$ 26,024	27,264	28,572	29,951	31,407

Water Fund - Projection of Cash Outflows

Schedule 3-W 2 of 4

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Department 800 - Engineering					
Personal Services					
Full Time Salaries	\$ 100,275	104,286	108,457	112,796	117,308
Part-Time Salaries	2,500	2,600	2,704	2,812	2,925
PERS Retirement	8,802	9,154	9,520	9,901	10,297
PERS Monthly Employer UAL Payment	14,439	15,017	15,617	16,242	16,892
Employee Group Insurance	18,330	19,980	21,778	23,738	25,874
Vehicle Allowance	1,920	2,093	2,281	2,486	2,710
Cell Phone Stipend	240	250	260	270	281
Medical Savings Account	48	50	52	54	56
FICA/Medicare Insurance	1,490	1,550	1,612	1,676	1,743
Sick Leave Taken - Part time	-	-	-	-	-
Sick Leave Buy Back	700	728	757	787	819
Annual Vacation Cash Out	1,200	1,248	1,298	1,350	1,404
Deferred Compensation	63	66	68	71	74
Total Personal Services Expenses	\$ 150,007	157,020	164,404	172,183	180,382
Department 804 - Water Division					
Personal Services					
Full Time Salaries	\$ 302,976	315,095	327,699	340,807	354,439
Overtime	70,000	72,800	75,712	78,740	81,890
PERS Retirement	28,187	29,314	30,487	31,707	32,975
PERS Monthly Employer UAL Payment	53,945	56,103	58,347	60,681	63,108
Employee Group Insurance	93,659	102,088	111,276	121,291	132,207
Medical Savings Account	108	112	117	121	126
FICA/Medicare Insurance	5,058	5,260	5,471	5,690	5,917
Sick Leave Buy Back	4,500	4,680	4,867	5,062	5,264
Annual Vacation Cash Out	3,000	3,120	3,245	3,375	3,510
Total Personal Services Expenses	\$ 561,433	588,573	617,221	647,473	679,437

Water Fund - Projection of Cash Outflows

Schedule 3-W 3 of 4

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Fixed Operating Expenses					
Office Supplies	\$ 1,950	1,994	2,039	2,085	2,132
Printing & Copies	4,970	5,082	5,196	5,313	5,433
Postage	29,040	29,693	30,362	31,045	31,743
Office Equipment Maintnce	50	51	52	53	55
Equipment Rental	240	245	251	257	262
Contractual Services	44,901	45,911	46,944	48,001	49,081
Accounting & Auditing Svc	8,732	8,928	9,129	9,335	9,545
Financial Services	15,401	15,748	16,102	16,464	16,835
Computer Replacement Chrg	1,300	1,329	1,359	1,390	1,421
Computing Operations	16,000	16,360	16,728	17,104	17,489
Total Fixed Operating Expenses	\$ 122,584	125,342	128,162	131,046	133,995
Fixed Operating Expenses					
Conferences & Meetings	\$ 3,000	3,068	3,137	3,207	3,279
Uniforms & Safety Gear	5,700	5,828	5,959	6,093	6,231
Dues, Membrshps & Subscript	4,500	4,601	4,705	4,811	4,919
Office Supplies	3,000	3,068	3,137	3,207	3,279
Special Departmental	174,500	178,426	182,441	186,546	190,743
Small Tools	3,500	3,579	3,659	3,742	3,826
Post Employt Ben-GASB 45	50,000	51,125	52,275	53,452	54,654
Equipment Rental	5,000	5,113	5,228	5,345	5,465
Buildings & Grounds Mtce	3,175	3,246	3,319	3,394	3,471
Well & Pump Maintenance	134,000	137,015	140,098	143,250	146,473
Utilities	503,000	514,318	525,890	537,722	549,821
Purchase Water Capital	150,000	153,000	156,060	159,181	162,365
Chino Pump Tax	25,000	25,563	26,138	26,726	27,327
Contractual Services	528,680	540,575	552,738	565,175	577,891
Administrative Overhead	362,216	485,290	504,702	524,890	545,885
Vehicle Operations & Mtce	68,000	69,530	71,094	72,694	74,330
Vehicle Replacement Chrgs	61,411	62,793	64,206	65,650	67,127
Computer Replacement Chrg	1,200	1,227	1,255	1,283	1,312
Computing Operations	16,000	16,360	16,728	17,104	17,489
Self-Ins Expenses	2,000	2,045	2,091	2,138	2,186
Self-Ins Settlements	30,000	30,675	31,365	32,071	32,792
Equipment	15,000	15,338	15,683	16,035	16,396
Building & Improvements	15,000	15,338	15,683	16,035	16,396
Property Taxes	610	610	610	610	610
Total Fixed Operating Expenses	\$ 2,164,492	2,327,728	2,388,199	2,450,362	2,514,269
Variable Operating Expenses					
Water Purchases	\$ 5,282,500	5,388,150	5,495,913	5,605,831	5,717,948
Total Variable Operating Expenses	\$ 5,282,500	5,388,150	5,495,913	5,605,831	5,717,948

Water Fund - Projection of Cash Outflows

Schedule 3-W 4 of 4

Transfers Out					
Interfund Transfers Out	\$ 127,223	127,223	127,223	127,223	127,223
Interfund Capital Transfer	-	29,725	2,112,630	2,195,353	2,275,455
Transfer Out - Rate Stabilization Contributions	-	200,000	200,000	200,000	200,000
Total Transfers Out	\$ 127,223	356,948	2,439,853	2,522,576	2,602,678
Debt Service					
Water_Sewer 2009 Bond	\$ 963,613	961,165	959,491	962,439	959,546
EDA Loan Payable	106,567	-	-	-	-
Total Debt Service	\$ 1,070,180	961,165	959,491	962,439	959,546
Total Personal Services All Departments	\$ 1,011,848	1,060,159	1,111,109	1,164,865	1,221,609
Personal Services Execution Percentage	95%	95%	95%	95%	95%
Total: Personal Services Funding Level	\$ 961,256	1,007,151	1,055,553	1,106,621	1,160,528
Total: Fixed Operating Expenses - All Depts	\$ 2,287,076	2,453,071	2,516,361	2,581,408	2,648,263
Fixed Operating Expenses Execution Percentage	95%	95%	95%	95%	95%
Total: Fixed Operating Expenses - All Depts	\$ 2,172,722	2,330,417	2,390,543	2,452,337	2,515,850
Total: Variable Operating Expenses - All Depts	\$ 5,282,500	5,388,150	5,495,913	5,605,831	5,717,948
Variable Operating Expenses Execution Percentage	100%	100%	100%	100%	100%
Total: Variable Operating Expenses Funding Level	\$ 5,282,500	5,388,150	5,495,913	5,605,831	5,717,948
Total: O&M Cash Outflow	\$ 9,613,881	10,043,832	12,341,353	12,649,804	12,956,551

(1) FY 2017 expenses are based on the FY 2017 Proposed Budget, respectively. Beginning in FY 2018, expenses are based upon the FY 2017 estimates and cost escalation factors

Water Fund - Cost Escalation Factors

Schedule 4-W 1 of 2

Annual Cost Escalation Factors:	Code	FY 2018	FY 2019	FY 2020	FY 2021
Operating Expense Category					
Full Time Salaries	30100	4.00%	4.00%	4.00%	4.00%
Part-Time Salaries	30105	4.00%	4.00%	4.00%	4.00%
Part-Time Salaries-32 Hour	30106	4.00%	4.00%	4.00%	4.00%
Overtime	30110	4.00%	4.00%	4.00%	4.00%
Part-Time Salaries	30200	4.00%	4.00%	4.00%	4.00%
PERS Monthly UAL Payment	30201	4.00%	4.00%	4.00%	4.00%
Overtime	30203	4.00%	4.00%	4.00%	4.00%
PERS Retirement	30205	9.00%	9.00%	9.00%	9.00%
Employee Group Insurance	30210	9.00%	9.00%	9.00%	9.00%
Cell Phone Stipend	30212	4.00%	4.00%	4.00%	4.00%
Vehicle Allowance	30215	4.00%	4.00%	4.00%	4.00%
Cell Phone Stipend	30220	4.00%	4.00%	4.00%	4.00%
Administrative Leave Cash Out	30221	4.00%	4.00%	4.00%	4.00%
Sick Leave Taken - Part time	30224	4.00%	4.00%	4.00%	4.00%
Medical Savings Account	30225	4.00%	4.00%	4.00%	4.00%
Sick Leave Taken	30226	4.00%	4.00%	4.00%	4.00%
Sick Leave Payoff	30227	4.00%	4.00%	4.00%	4.00%
Comp Taken	30228	4.00%	4.00%	4.00%	4.00%
Comp Payoff	30229	4.00%	4.00%	4.00%	4.00%
FICA/Medicare Insurance	30230	4.00%	4.00%	4.00%	4.00%
Sick Leave Buy Back	30231	4.00%	4.00%	4.00%	4.00%
Vacation Payoff	30232	4.00%	4.00%	4.00%	4.00%
Deferred Compensation	30235	4.00%	4.00%	4.00%	4.00%
Continuous Service Bonus	30240	4.00%	4.00%	4.00%	4.00%
Workers Compensation	30245	4.00%	4.00%	4.00%	4.00%
Tuition Reimbursement	30255	4.00%	4.00%	4.00%	4.00%
Conferences & Meetings	30300	2.25%	2.25%	2.25%	2.25%
Uniforms & Safety Gear	30310	2.25%	2.25%	2.25%	2.25%
Employee Hiring Costs	30315	2.25%	2.25%	2.25%	2.25%
Dues, Membrshps & Subscrpt	30320	2.25%	2.25%	2.25%	2.25%
Office Supplies	30400	2.25%	2.25%	2.25%	2.25%
Printing & Copies	30405	2.25%	2.25%	2.25%	2.25%
Postage	30410	2.25%	2.25%	2.25%	2.25%
Special Departmental	30415	2.25%	2.25%	2.25%	2.25%
Small Tools	30425	2.25%	2.25%	2.25%	2.25%
Small Office Equipment	30430	2.25%	2.25%	2.25%	2.25%
Post Employmt Ben-GASB 45	30470	2.25%	2.25%	2.25%	2.25%
Office Equipment Maintnce	32100	2.25%	2.25%	2.25%	2.25%
Equipment Rental	32105	2.25%	2.25%	2.25%	2.25%
Buildings & Grounds Mtce	32200	2.25%	2.25%	2.25%	2.25%
Well & Pump Maintenance	32450	2.25%	2.25%	2.25%	2.25%
Utilities	33100	2.25%	2.25%	2.25%	2.25%
Water Purchases	33105	2.00%	2.00%	2.00%	2.00%
Purchase Water Capital	33107	2.00%	2.00%	2.00%	2.00%
Chino Pump Tax	33115	2.25%	2.25%	2.25%	2.25%
Contractual Services	34100	2.25%	2.25%	2.25%	2.25%

Water Fund - Cost Escalation Factors

Schedule 4-W 2 of 2

Annual Cost Escalation Factors:	Code	FY 2018	FY 2019	FY 2020	FY 2021
Accounting & Auditing Svc	34125	2.25%	2.25%	2.25%	2.25%
Financial Services	34130	2.25%	2.25%	2.25%	2.25%
Administrative Overhead	35150	4.00%	4.00%	4.00%	4.00%
Vehicle Operations & Mtce	42100	2.25%	2.25%	2.25%	2.25%
Vehicle Replacement Chrgs	42105	2.25%	2.25%	2.25%	2.25%
Computer Replacement Chrg	42110	2.25%	2.25%	2.25%	2.25%
Computing Operations	42115	2.25%	2.25%	2.25%	2.25%
Self-Ins Expenses	42220	2.25%	2.25%	2.25%	2.25%
Self-Ins Settlements	42225	2.25%	2.25%	2.25%	2.25%
Equipment	43100	2.25%	2.25%	2.25%	2.25%
Building & Improvements	43115	2.25%	2.25%	2.25%	2.25%
Default Inflation Factor (if expense not listed above)		2.50%	2.50%	2.50%	2.50%

Water Fund - Capital Improvement Program

Schedule 5-W

PROJECT DESCRIPTION	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5-Year Total
Description						
Meter & Scada Improvements	\$ 100,000	10,000	10,000	10,000	10,000	140,000
Fire Hydrant Installation	50,000	20,000	10,000	10,000	10,000	100,000
Valve Installation	20,000	20,000	10,000	10,000	10,000	70,000
Back Flow Prevention	10,000	10,000	10,000	10,000	10,000	50,000
2.0 MG Reservoir - Bluff Street	100,000	-	-	-	-	100,000
2.0 MG Reservoir - Bluff Street	-	1,985,000	-	-	-	1,985,000
Water Treatment arsenic/Flouride/Chlorine	-	400,000	-	-	-	400,000
Reservoir Maintenance - Exterior Paint/Interior Coating	110,000	50,000	-	-	-	160,000
Vine St - Corydon to Bronco, Driftwood & Halfmoon	-	25,000	500,000	-	-	525,000
GIS/CMMS System	75,000	50,000	-	-	-	125,000
Hamner Ave. Waterline - Third to Fourth (east side)	25,000	-	-	-	-	25,000
Hamner Ave. Waterline - Third to Fourth (east side)	-	550,000	-	-	-	550,000
Well Rehab 12, 13 & 15	100,000	100,000	-	-	-	200,000
Hillside Waterline - Sixth St. to 5th Street	25,000	-	-	-	-	25,000
Hillside Waterline - Sixth St. to 5th Street	-	500,000	-	-	-	500,000
Temescal Waterline - Fourth St to Fifth St	525,000	-	-	-	-	525,000
Shawnee 10" Mainline Replacement (Corydon to Bronco)	-	-	550,000	-	-	550,000
Valley View Waterline - Sixth to Seventh	525,000	-	-	-	-	525,000
Third Street Waterline Relocations	108,000	-	-	-	-	108,000
Temescal 10" Mainline Replacement (4th to Reservoir)	-	-	300,000	-	-	300,000
Temescal 10" Mainline Replacement (5th to 6th)	-	-	540,000	-	-	540,000
Hamner 12" Mainline Replacement (1st to 3rd)	-	-	1,100,000	-	-	1,100,000
Valley View 12" Mainline Replacement (7th to River)	270,000	-	-	-	-	270,000
Sixth St 12" Mainline Replacement (Crestview to Sierra)	-	-	2,600,000	-	-	2,600,000
River Rd 12" Mainline Replacement (Bluff to Corydon)	-	-	-	1,075,000	-	1,075,000
Corydon 12" Mainline Replacement (River to 5th)	-	-	-	2,600,000	-	2,600,000
Bronco 10" Mainline Replacement (ALL)	-	-	-	825,000	-	825,000
Reservoir #1 Replacement	-	2,100,000	-	-	-	2,100,000
Reservoir #2 Replacement	-	-	-	-	2,100,000	2,100,000
Reservoir #3 Booster Station Upgrade	-	-	220,000	-	-	220,000
Reservoir #5 & 6 Cathodic Protection Replacement	110,000	-	-	-	-	110,000
Reservoir #3 & 4 Rehab	-	-	-	2,050,000	-	2,050,000
Hamner Ave Bridge 24" Main	-	-	-	-	600,000	600,000
Hillside 12" Mainline Replacement (5th to 6th)	-	-	-	-	800,000	800,000
Bluff St 12" Mainline Replacement (Vine to Stagecoach)	-	-	-	-	2,600,000	2,600,000
Unspecified Waterline Replacement	100,000	100,000	-	-	-	200,000
Total CIP (in FY 2016 dollars)	\$ 2,353,000	5,920,000	5,850,000	6,590,000	6,140,000	26,853,000
Capital Redistribution to Subsequent Fiscal Years	-	(3,420,000)	(3,350,000)	(4,090,000)	(3,640,000)	(14,500,000)
Compounded Annual Cost Escalation	0.0%	3.0%	6.1%	9.3%	12.6%	
Annual Capital Spending Execution Percentage	100%	100%	100%	100%	100%	
Final CIP Funding Level	\$ 2,353,000	\$ 2,575,000	\$ 2,652,250	\$ 2,731,818	\$ 2,813,772	\$ 13,125,840

(1) Per discussions with Staff, unspecified projects includes unforeseen projects not originally designated in the budget that the utility must complete in any given year.

Water Fund - Assumptions

Schedule 6-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Annual Revenue Growth - Water:					
Number of Billed Accounts	10,560	10,613	10,666	10,720	10,773
Growth	53	53	53	53	54
<i>Percent Change in Billed Accounts</i>	0.50%	0.50%	0.50%	0.50%	0.50%
<i>Percent Change in Billed Use</i>	5.50%	0.50%	0.50%	0.50%	0.50%
Price Elasticity Coefficient:					
Applied to Usage Charge Rate Revenue	0.10	0.10	0.10	0.10	0.10
Impact Fees					
Water	\$ 4,662	4,662	4,662	4,662	4,662
Average Annual Interest Earnings Rate:					
On Fund Balances	0.25%	0.50%	0.75%	1.00%	1.25%
Operating Budget Execution Percentage:					
Personal Services	95%	95%	95%	95%	95%
Variable O&M	100%	100%	100%	100%	100%
Fixed O&M	95%	95%	95%	95%	95%
CIP	100%	100%	100%	100%	100%
Minor Capital Outlay	100%	100%	100%	100%	100%
Revenue Fund Reserve Target:					
Number of Months of Annual Operating Expense	0.5	1.0	1.5	2.0	2.5
Rate Stabilization Reserve Target:					
Target Reserve Balance	\$ -	200,000	400,000	600,000	800,000

Water Fund - Forecast of Net Revenues

Schedule 7-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Rate Revenue Subject to Growth & Rate Adjustments				
2	\$ 8,380,759	8,911,709	10,620,502	11,719,881	12,825,965
3	-	633,723	-	-	-
4	-	15,207	17,117	19,095	21,110
5	Weather Normalization and Other Adjustments				
6	\$ 8,380,759	9,560,639	10,637,619	11,738,977	12,847,074
7	7.44%	12.00%	11.00%	10.00%	2.00%
8	623,391	1,147,277	1,170,138	1,173,898	256,941
9	(92,440)	(87,414)	(87,876)	(86,909)	(17,552)
10	\$ 8,911,709	10,620,502	11,719,881	12,825,965	13,086,464
11	Plus: Other Operating Revenue				
12	\$ 2,035,410	\$ 330,436	\$ 335,608	\$ 340,383	\$ 350,528
13	\$ 10,947,118	10,950,938	12,055,489	13,166,348	13,436,991
14	Less: Operating Expenses				
15	\$ (961,256)	(1,007,151)	(1,055,553)	(1,106,621)	(1,160,528)
16	(5,282,500)	(5,388,150)	(5,495,913)	(5,605,831)	(5,717,948)
17	(2,172,143)	(2,329,838)	(2,389,964)	(2,451,758)	(2,515,270)
18	\$ 2,531,220	2,225,799	3,114,060	4,002,138	4,043,245
19	Plus: Non-Operating Income/(Expense)				
20	\$ -	-	-	-	-
21	924	5,677	10,849	15,624	25,769
22	532,135	533,360	534,591	535,828	537,071
23	-	-	-	-	-
24	\$ 3,064,279	2,764,835	3,659,499	4,553,590	4,606,084
25	Less: Revenues Excluded From Cash Flow Test				
26	(532,135)	(533,360)	(534,591)	(535,828)	(537,071)
27	-	-	-	-	-
28	\$ 2,532,144	2,231,475	3,124,908	4,017,762	4,069,013
29	Cash Flow Test				
30	\$ 1,821,493	2,225,799	3,114,060	4,002,138	4,043,245
31	(127,223)	(356,948)	(2,439,853)	(2,522,576)	(2,602,678)
32	(1,070,180)	(961,165)	(959,491)	(962,439)	(959,546)
33	-	-	-	-	-
34	-	-	-	-	-
35	\$ 624,090	907,685	(285,284)	517,123	481,020
36	Unrestricted Working Capital Reserve Fund Test				
37	\$ 57,380	681,470	1,589,155	1,303,871	1,820,994
38	624,090	907,685	(118,790)	517,123	481,020
39	-	-	(166,495)	-	-
40	-	-	-	-	-
41	-	-	-	-	-
42	\$ 681,470	1,589,155	1,303,871	1,820,994	2,302,014
43	355,963	756,841	1,422,660	1,947,798	2,499,255
44	\$ 325,506	832,314	(118,790)	(126,804)	(197,241)

Water Fund - Debt Service Coverage

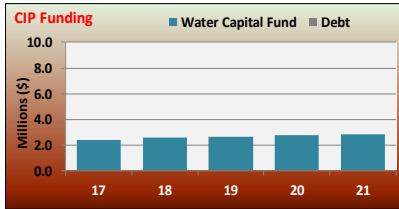
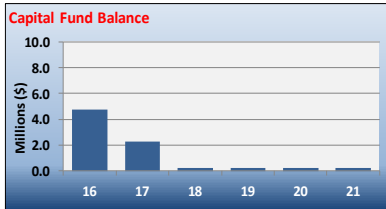
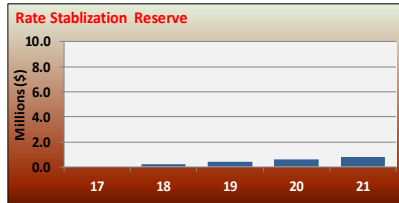
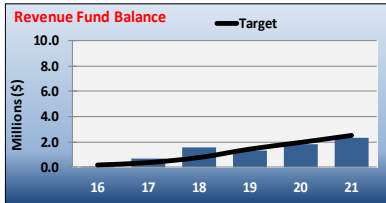
Schedule 8-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenues					
Water Rate Revenue	\$ 8,911,709	10,620,502	11,719,881	12,825,965	13,086,464
Other Operating Revenue	2,034,486	324,759	324,759	324,759	324,759
Non-Operating Income	-	-	-	-	-
Interest Income	924	5,677	10,849	15,624	25,769
Total Operating Revenues	\$ 10,947,118	10,950,938	12,055,489	13,166,348	13,436,991
Operating Expenses					
Personal Services	\$ (961,256)	(1,007,151)	(1,055,553)	(1,106,621)	(1,160,528)
Variable O&M	(5,282,500)	(5,388,150)	(5,495,913)	(5,605,831)	(5,717,948)
Fixed O&M	(2,172,143)	(2,329,838)	(2,389,964)	(2,451,758)	(2,515,270)
Operating Expenses	\$ (8,415,898)	(8,725,139)	(8,941,430)	(9,164,210)	(9,393,747)
Net Revenues Available for Debt Service	\$ 2,531,220	2,225,799	3,114,060	4,002,138	4,043,245
Senior Lien Debt Service	\$ 963,613	961,165	959,491	962,439	959,546
Senior Lien Debt Coverage	2.63	2.32	3.25	4.16	4.21
Minimum Debt Service Coverage	1.25	1.25	1.25	1.25	1.25
Net Revenues Available for Subordinate Debt Service	\$ 1,567,607	1,264,634	2,154,568	3,039,699	3,083,698
Subordinate Debt Service	\$ 106,567	\$ -	\$ -	\$ -	\$ -
Subordinate Debt Service Coverage	14.71	-	-	-	-
Minimum Debt Service Coverage	1.25	1.25	1.25	1.25	1.25
All In Debt Service Coverage	2.37	2.32	3.25	4.16	4.21

Water Fund - FAMS - Control Panel

Schedule 9-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Water Rate Increase	15.00%	12.00%	11.00%	10.00%	2.00%
Usage Rate Increases	15.00%	12.00%	11.00%	10.00%	2.00%
Senior Lien Water Coverage	1.89	2.32	3.25	4.16	4.21
CIP \$ Redistribution ▶	\$0.00	-\$3.42	-\$3.35	-\$4.09	-\$3.64
CIP Execution % ▶	100%	100%	100%	100%	100%
Operating Reserve Mo ▶	0.5	1.0	1.5	2.0	2.5
Average Water Bill (20 HCF)	\$78	\$87	\$97	\$107	\$109
Change \$	\$13	\$9	\$10	\$10	\$2



Water Fund - Capital Fund Flow of Funds

Schedule 10-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Water Capital Fund Beginning Balance	\$ 4,779,882	2,258,076	252,422	249,267	251,119
Revenues					
Silverlakes Loan Payment	\$ 76,219	\$ 80,840	\$ 85,741	\$ 90,938	\$ 96,451
Loan Interest	210,979	\$ 206,358	\$ 201,458	\$ 196,260	\$ 190,747
Development Impact Fees	244,937	246,161	247,392	248,629	249,872
Transfer In from Operating Fund	-	29,725	2,112,630	2,195,353	2,275,455
Interest Income	8,786	6,261	1,874	2,489	3,131
Total Revenues	540,922	569,346	2,649,095	2,733,670	2,815,657
Uses of Funds					
Transfer Out to Operating Fund	\$ 709,727	-	-	-	-
Capital Projects	2,353,000	2,575,000	2,652,250	2,731,818	2,813,772
Total Use Funds	3,062,727	2,575,000	2,652,250	2,731,818	2,813,772
Water Capital Fund End of Year Balance	\$ 2,258,076	252,422	249,267	251,119	253,004

Water Fund - Long-Term Borrowing Projections

Schedule 11-W

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Term (Years)	30	30	30	30	30
Interest Rate	4.00%	4.25%	4.50%	4.75%	5.00%
Sources of Funds					
Par Amount	\$ -	-	-	-	-
Interest During Construction	-	-	-	-	-
Total Sources	\$ -	-	-	-	-
Uses of Funds					
Proceeds	-	-	-	-	-
Cost of Issuance	2.00% of Par	-	-	-	-
Underwriter's Discount	\$0.00 per \$1,000	-	-	-	-
Bond Insurance	0 times total Debt Service	-	-	-	-
Capitalized Interest	0 Years Interest	-	-	-	-
Debt Service Surety	0.00% of Debt Service	-	-	-	-
Debt Service Reserve	1 Years of Debt Service	-	-	-	-
Other Costs	-	-	-	-	-
Total Uses	\$ -	-	-	-	-
1 Year Interest	-	-	-	-	-
Annual Debt Service	\$ -	-	-	-	-
Total Debt Service	\$ -	-	-	-	-
Cumulative New Annual Debt Service ⁽¹⁾	-	-	-	-	-

(1) Cumulative new annual debt service assumes interest-only payments in first year of debt issuance.

Sewer Fund - Beginning Balances as of July 1, 2016

Schedule 1-S

Fund Balance Detail	Revenue Fund	Sewer Connection Fund	Sewer Capital Fund
Current Unrestricted Assets			
█ Cash and Cash Equivalents	\$ 3,748,070	391,645	3,264,597
█ Receivables	1,031,145	394	27,245
█ Utility Overpayment	(92)	-	-
Total Assets	\$ 4,779,123	392,039	3,291,842
█ Less: Accounts Payable	\$ (105,446)	(2,423)	(24,557)
█ Less: Other Payables	(135,473)	-	-
Calculated Fund Balance (Assets - Liabilities)	\$ 4,538,204	389,616	3,267,286
█ Plus/(Less):	-	-	-
Net Unrestricted Fund Balance	\$ 4,538,204	389,616	3,267,286
Funds Encumbered or Reserved for Projects not in the CIP	-	-	-
Working Capital	4,538,204	389,616	3,267,286
Total Available Funds			\$ 8,195,106

(1) Beginning Fund balance was provided by City staff based on FY16 audited year end balances.

Sewer Fund - Projection of Cash Inflows

Schedule 2-S

	FY 2017 Budget	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Sewer Rate Revenue					
Sewer Sales - Base Facility Charges	\$ 4,448,016	4,470,256	4,739,701	5,025,386	5,328,291
Sewer Sales - Usage Charges	1,854,254	1,854,254	1,956,238	2,063,831	2,177,342
Total Sewer Rate Revenue	\$ 6,302,270	6,324,510	6,695,939	7,089,217	7,505,633
Other Operating Revenue ⁽¹⁾					
City of Corona	\$ 363,607	363,607	363,607	363,607	363,607
Miscellaneous Revenue	1,000	1,000	1,000	1,000	1,000
Total Other Operating Revenue	\$ 364,607	364,607	364,607	364,607	364,607
Interest Earnings ⁽²⁾					
Interest Income	\$ 11,883	25,486	39,317	50,301	54,764
Total Interest Earnings Revenue	\$ 11,883	25,486	39,317	50,301	54,764
Capital Project Funding Sources ⁽³⁾					
City of Corona	\$ 25,443	25,443	25,443	25,443	25,443
Loan Interest	215,150	210,438	205,440	200,140	194,518
Silverlakes Loan Payment	77,726	82,438	87,436	92,736	98,358
Development Impact Fees	221,524	222,632	223,745	224,864	225,988
Total Capital Project Funding Sources	\$ 539,843	540,951	542,064	543,183	544,307
Total Cash Inflows	\$ 7,218,603	7,255,554	7,641,927	8,047,308	8,469,311

(1) Unless otherwise specified, FY 2017 other operating revenues are per the FY 2017 Preliminary Budget, respectively.

(2) Interest Income is calculated based off annual total fund balance at the beginning of each fiscal year and restricted fund amounts

Sewer Fund - Projection of Cash Outflows

Schedule 3-S 1 of 3

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Department 703 - Human Resources					
Personal Services					
Full Time Salaries	\$ 8,676	9,023	9,384	9,759	10,150
PERS Retirement	955	993	1,033	1,074	1,117
PERS Monthly Employer UAL Payment	2,503	2,603	2,707	2,816	2,928
Employee Group Insurance	859	936	1,021	1,112	1,213
Cell Phone Stipend	72	75	78	81	84
Medical Savings Account	859	893	929	966	1,005
FICA/Medicare Insurance	126	131	136	142	147
Sick Leave Buy Back	175	182	189	197	205
Annual Vacation Cash Out	160	166	173	180	187
Tuition Reimbursement	96	100	104	108	112
Total Personal Services Expenses	\$ 14,481	15,103	15,754	16,435	17,148
Department 706 - Fiscal & Support Services					
Personal Services					
Full Time Salaries	\$ 138,917	144,474	150,253	156,263	162,513
PERS Retirement	13,326	13,859	14,413	14,990	15,590
PERS Monthly Employer UAL Payment	27,338	28,432	29,569	30,752	31,982
Employee Group Insurance	32,676	35,617	38,822	42,316	46,125
Vehicle Allowance	720	749	779	810	842
Cell Phone Stipend	90	94	97	101	105
Medical Savings Account	185	192	200	208	216
FICA/Medicare Insurance	2,014	2,095	2,178	2,265	2,356
Sick Leave Buy Back	2,000	2,080	2,163	2,250	2,340
Annual Vacation Cash Out	2,000	2,080	2,163	2,250	2,340
Total Personal Services Expenses	\$ 219,266	229,670	240,638	252,205	264,409
Department 740 - Public Works Inspection					
Personal Services					
Full Time Salaries	\$ 15,349	15,963	16,601	17,266	17,956
PERS Retirement	1,690	1,758	1,828	1,901	1,977
PERS Monthly Employer UAL Payment	4,428	4,605	4,789	4,981	5,180
Employee Group Insurance	3,984	4,343	4,733	5,159	5,624
FICA/Medicare Insurance	223	232	241	251	261
Sick Leave Buy Back	275	286	297	309	322
Annual Vacation Cash Out	75	78	81	84	88
Total Personal Services Expenses	\$ 26,024	27,264	28,572	29,951	31,407
Department 800 - Engineering					
Personal Services					
Full Time Salaries	\$ 100,275	104,286	108,457	112,796	117,308
Part-Time Salaries	2,500	2,600	2,704	2,812	2,925
PERS Retirement	8,802	9,154	9,520	9,901	10,297
PERS Monthly Employer UAL Payment	14,439	15,017	15,617	16,242	16,892
Employee Group Insurance	18,330	19,980	21,778	23,738	25,874
Vehicle Allowance	1,920	1,997	2,077	2,160	2,246
Cell Phone Stipend	240	250	260	270	281
Medical Savings Account	48	50	52	54	56
FICA/Medicare Insurance	1,490	1,550	1,612	1,676	1,743
Sick Leave Buy Back	700	728	757	787	819
Annual Vacation Cash Out	1,200	1,248	1,298	1,350	1,404
Deferred Compensation	63	66	68	71	74
Total Personal Services Expenses	\$ 150,007	156,924	164,200	171,857	179,918

Sewer Fund - Projection of Cash Outflows

Schedule 3-S 2 of 3

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Department 809 - Sewer Division					
Personal Services					
Full Time Salaries	\$ 288,834	300,387	312,403	324,899	337,895
Overtime	30,000	31,200	32,448	33,746	35,096
PERS Retirement	26,991	28,071	29,193	30,361	31,576
PERS Monthly Employer UAL Payment	52,208	54,296	56,468	58,727	61,076
Employee Group Insurance	91,266	99,480	108,433	118,192	128,829
Medical Savings Account	108	112	117	121	126
FICA/Medicare Insurance	4,254	4,424	4,601	4,785	4,977
Sick Leave Buy Back	1,600	1,664	1,731	1,800	1,872
Annual Vacation Cash Out	1,000	1,040	1,082	1,125	1,170
Conferences & Meetings	3,000	3,068	3,137	3,207	3,279
Administrative Overhead	200,000	299,233	311,202	323,650	336,596
Total Personal Services Expenses	\$ 699,261	\$ 822,975	\$ 860,815	\$ 900,614	\$ 942,492
Fixed Operating Expenses					
Office Supplies	\$ 1,950	1,994	2,039	2,085	2,132
Printing & Copies	4,970	5,082	5,196	5,313	5,433
Postage	29,040	29,693	30,362	31,045	31,743
Office Equipment Maintnce	50	51	52	53	55
Equipment Rental	240	245	251	257	262
Contractual Services	45,200	46,217	47,257	48,320	49,407
Accounting & Auditing Svc	8,732	8,928	9,129	9,335	9,545
Financial Services	20,250	20,706	21,172	21,648	22,135
Computer Replacement Chrg	1,300	1,329	1,359	1,390	1,421
Computing Operations	16,000	16,360	16,728	17,104	17,489
Total Fixed Operating Expenses	\$ 127,732	130,606	133,545	136,549	139,622
Fixed Operating Expenses					
Uniforms & Safety Gear	\$ 5,700	5,828	5,959	6,093	6,231
Dues, Membrshps & Subscript	3,000	3,068	3,137	3,207	3,279
Office Supplies	1,000	1,023	1,046	1,069	1,093
Special Departmental	17,000	17,383	17,774	18,174	18,582
Small Tools	3,500	3,579	3,659	3,742	3,826
Post Employmt Ben-GASB 45	50,000	52,000	54,080	56,243	58,493
Equipment Rental	5,000	5,113	5,228	5,345	5,465
Buildings & Grounds Mtce	3,175	3,246	3,319	3,394	3,471
Well & Pump Maintenance	45,000	46,013	47,048	48,106	49,189
Utilities	50,100	51,227	52,380	53,558	54,763
Vehicle Operations & Mtce	52,000	53,170	54,366	55,590	56,840
Vehicle Replacement Chrgs	40,941	41,862	42,804	43,767	44,752
Computer Replacement Chrg	1,000	1,023	1,046	1,069	1,093
Computing Operations	16,000	16,360	16,728	17,104	17,489
Self-Ins Settlements	25,000	25,563	26,138	26,726	27,327
Equipment	7,500	7,669	7,841	8,018	8,198
Building/Improvements	7,500	7,500	7,500	7,500	7,500
Total Fixed Operating Expenses	\$ 333,416	341,624	350,052	358,706	367,592
Variable Operating Expenses					
Contractual Services	\$ 2,810,780	2,874,023	2,938,688	3,004,809	3,072,417
Total Variable Operating Expenses	\$ 2,810,780	2,874,023	2,938,688	3,004,809	3,072,417

Sewer Fund - Projection of Cash Outflows

Schedule 3-S 3 of 3

	FY 2017 Budget ⁽¹⁾	FY 2018 Projected	FY 2019 Projected	FY 2020 Projected	FY 2021 Projected
Transfers Out					
Interfund Transfers Out 126 - 809 - 44100	\$ 127,223	127,223	127,223	127,223	127,223
Capital Interfund Transfer	-	-	-	755,860	1,424,366
Total Transfers Out	\$ 127,223	127,223	127,223	883,083	1,551,589
Debt Service					
Water_Sewer 2009 Bond	\$ 1,649,716	1,646,495	1,647,919	1,647,596	1,645,989
SRF Loan	146,694	146,556	-	-	-
City of Norco SRF Loan - WRCRA	-	-	626,538	626,538	626,538
Total Debt Service	\$ 1,796,410	1,793,051	2,274,456	2,274,134	2,272,526
Total Personal Services All Departments	\$ 1,109,039	1,251,937	1,309,978	1,371,062	1,435,374
Personal Services Execution Percentage	95%	95%	95%	95%	95%
Total: Personal Services Funding Level	\$ 1,053,587	1,189,340	1,244,479	1,302,509	1,363,606
Total: Fixed Operating Expenses - All Depts	\$ 461,148	472,230	483,597	495,255	507,214
Fixed Operating Expenses Execution Percentage	100%	100%	100%	100%	100%
Total: Fixed Operating Expenses - All Depts	\$ 461,148	472,230	483,597	495,255	507,214
Total: Variable Operating Expenses - All Depts	\$ 2,810,780	2,874,023	2,938,688	3,004,809	3,072,417
Variable Operating Expenses Execution Percentage	100%	100%	100%	100%	100%
Total: Variable Operating Expenses Funding Level	\$ 2,810,780	2,874,023	2,938,688	3,004,809	3,072,417
Total: O&M Cash Outflow	\$ 6,249,148	6,455,866	7,068,443	7,959,789	8,767,351

(1) FY 2017 expenses are based on the FY 2017 Proposed Budget, respectively. Beginning in FY 2018, expenses are based upon the FY 2017 estimates and cost escalation factors

Sewer Fund - Cost Escalation Factors

Schedule 4-S

Annual Cost Escalation Factors:	Code	FY 2018	FY 2019	FY 2020	FY 2021
Operating Expense Category					
Full Time Salaries	30100	4.00%	4.00%	4.00%	4.00%
Part-Time Salaries	30105	4.00%	4.00%	4.00%	4.00%
Part Time Salaries-32 Hour	30106	4.00%	4.00%	4.00%	4.00%
Overtime	30110	4.00%	4.00%	4.00%	4.00%
PERS Retirement	30200	4.00%	4.00%	4.00%	4.00%
PERS Monthly Employer UAL Payment	30201	4.00%	4.00%	4.00%	4.00%
PERS Retirement & Contra Account	30203	9.00%	9.00%	9.00%	9.00%
Employee Group Insurance	30205	9.00%	9.00%	9.00%	9.00%
Vehicle Allowance	30210	4.00%	4.00%	4.00%	4.00%
Cell Phone Stipend	30212	4.00%	4.00%	4.00%	4.00%
Medical Savings Account	30215	4.00%	4.00%	4.00%	4.00%
FICA/Medicare Insurance	30220	4.00%	4.00%	4.00%	4.00%
Administrative Leave Cash Out	30221	4.00%	4.00%	4.00%	4.00%
Sick Leave Taken - Part-Time	30224	4.00%	4.00%	4.00%	4.00%
Sick Leave Buy Back	30225	4.00%	4.00%	4.00%	4.00%
Sick Leave Taken	30226	4.00%	4.00%	4.00%	4.00%
Sick Leave Payoff	30227	4.00%	4.00%	4.00%	4.00%
Comp Taken	30228	4.00%	4.00%	4.00%	4.00%
Comp Payoff	30229	4.00%	4.00%	4.00%	4.00%
Annual Vacation Cash Out	30230	4.00%	4.00%	4.00%	4.00%
Vacation Taken	30231	4.00%	4.00%	4.00%	4.00%
Vacation Payoff	30232	4.00%	4.00%	4.00%	4.00%
Deferred Compensation	30235	4.00%	4.00%	4.00%	4.00%
Workers Compensation	30245	4.00%	4.00%	4.00%	4.00%
Tuition Reimbursement	30255	4.00%	4.00%	4.00%	4.00%
Conferences & Meetings	30300	2.25%	2.25%	2.25%	2.25%
Uniforms & Safety Gear	30310	2.25%	2.25%	2.25%	2.25%
Employee Hiring Costs	30315	4.00%	4.00%	4.00%	4.00%
Dues, Membrshps & Subscrpt	30320	2.25%	2.25%	2.25%	2.25%
Office Supplies	30400	2.25%	2.25%	2.25%	2.25%
Printing & Copies	30405	2.25%	2.25%	2.25%	2.25%
Postage	30410	2.25%	2.25%	2.25%	2.25%
Special Departmental	30415	2.25%	2.25%	2.25%	2.25%
Small Tools	30425	2.25%	2.25%	2.25%	2.25%
Small Office Equipment	30430	2.25%	2.25%	2.25%	2.25%
Post Employmt Ben-GASB 45	30470	4.00%	4.00%	4.00%	4.00%
Office Equipment Maintnce	32100	2.25%	2.25%	2.25%	2.25%
Equipment Rental	32105	2.25%	2.25%	2.25%	2.25%
Buildings & Grounds Mtce	32200	2.25%	2.25%	2.25%	2.25%
Well & Pump Maintenance	32450	2.25%	2.25%	2.25%	2.25%
Utilities	33100	2.25%	2.25%	2.25%	2.25%
Contractual Services	34100	2.25%	2.25%	2.25%	2.25%
Accounting & Auditing Svc	34125	2.25%	2.25%	2.25%	2.25%
Financial Services	34130	2.25%	2.25%	2.25%	2.25%
Administrative Overhead	35150	4.00%	4.00%	4.00%	4.00%
Vehicle Operations & Mtce	42100	2.25%	2.25%	2.25%	2.25%
Vehicle Replacement Chrgs	42105	2.25%	2.25%	2.25%	2.25%
Computer Replacement Chrg	42110	2.25%	2.25%	2.25%	2.25%
Computing Operations	42115	2.25%	2.25%	2.25%	2.25%
Self-Ins Settlements	42225	2.25%	2.25%	2.25%	2.25%
Equipment	43100	2.25%	2.25%	2.25%	2.25%
Default Inflation Factor (if expense not listed above)		2.50%	2.50%	2.50%	2.50%

Sewer Fund - Capital Improvement Program

Schedule 5-5

PROJECT DESCRIPTION	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	5-Year Total
Description						
SCADA	\$ 50,000	10,000	10,000	10,000	-	80,000
Recycled Water System Improvements	100,000	100,000	50,000	50,000	50,000	350,000
WRCRWA & Recycled Water Capital Improvements	400,000	50,000	50,000	50,000	50,000	600,000
I-15 Mainline Rehabilitation - Add Parallel Line	40,000	-	-	-	-	40,000
Corona #1 and Valley View #8 Lift Station - Rehabilitation	430,000	-	-	-	-	430,000
First Street Siphon Rehabilitation	165,000	-	-	-	-	165,000
GIS / CMMS System	75,000	50,000	-	-	-	125,000
Flume No. 14 - Large Siphon Inspection / Rehab	105,000	215,000	-	-	-	320,000
Confined Space and Rescue Equipment	20,000	-	-	-	-	20,000
Valley View Force Main Sanitary Sewer Manhole	30,000	-	-	-	-	30,000
Shawnee Mainline Replacement	230,000	-	-	-	-	230,000
Parkridge Mainline Replacement	230,000	-	-	-	-	230,000
Navy Meter Relocation	205,000	-	-	-	-	205,000
Grulla Lift Station Rehab	-	80,000	-	-	-	80,000
Old Hamner Lift Station Rehab	-	80,000	-	-	-	80,000
Lift Station No 9 Rehab	-	510,000	-	-	-	510,000
Lift Station No. 10 Rehab	-	510,000	-	-	-	510,000
Riverside County Flood Control:	-	-	-	-	-	-
Hamner Recycled Water Line	-	1,680,000	-	-	-	1,680,000
Crestlawn Recycled Water Line	-	-	1,200,000	-	-	1,200,000
Norco College Recycled Line	-	-	-	760,000	-	760,000
Hamner 12" Mainline - 6th to 3rd	-	-	-	950,000	-	950,000
Shadow Canyon 8-inch Mainline Replacement	-	-	510,000	-	-	510,000
Hillside 14" Mainline Replacement	-	-	510,000	-	-	510,000
Fifth - Vine - Del Mar 15" Mainline Replacement	-	-	-	1,480,000	-	1,480,000
2nd & Western to River Rd 10" Mainline Replacement	-	-	500,000	-	-	500,000
Third St 24" Mainline Replacement (W/O I-15)	-	-	780,000	-	-	780,000
Second/Corona to First St 15" Mainline Replacement	-	-	-	-	1,140,000	1,140,000
2nd & Hamner to 2nd & Corona 8" Mainline Replacement	-	-	-	-	580,000	580,000
27" Mainline Under I-15 between Second & Third	-	-	-	-	2,000,000	2,000,000
Unspecified Sewer Line Extention	25,000	25,000	25,000	25,000	-	100,000
Unspecified Lift Station Rehab	45,000	45,000	45,000	45,000	45,000	225,000
Transfer to General Fund-Overhead	7,088	-	-	-	-	7,088
Miscellaneous Sewer Extension (Sewer Connections)	15,000	15,000	15,000	15,000	15,000	75,000
Raising Manholes to Grade (Sewer Connections)	10,000	10,000	10,000	10,000	10,000	50,000
Transfer to General Fund-Overhead	81	-	-	-	-	81
Total CIP (in FY 2016 dollars)	\$ 2,257,169	3,455,000	3,705,000	3,395,000	3,890,000	16,702,169
Capital Redistribution to Subsequent Fiscal Years	-	(1,692,500)	(1,942,500)	(1,632,500)	(2,127,500)	(7,395,000)
Compounded Annual Cost Escalation	0.0%	3.0%	6.1%	9.3%	12.6%	
Annual Capital Spending Execution Percentage	100%	100%	100%	100%	100%	
Final CIP Funding Level	\$ 2,257,169	\$ 1,815,375	\$ 1,869,836	\$ 1,925,931	\$ 1,983,709	\$ 9,852,021

(1) Per discussions with Staff, unspecified projects includes unforeseen projects not originally designated in the budget that the utility must complete in any given year.

Sewer Fund - Assumptions

Schedule 6-S

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Annual Revenue Growth - Sewer:					
Number of Billed Accounts	7,259	7,295	7,332	7,368	7,405
Growth	36	36	36	37	37
<i>Percent Change in Billed Accounts</i>	0.50%	0.50%	0.50%	0.50%	0.50%
<i>Percent Change in Billed Use</i>	0.50%	0.50%	0.50%	0.50%	0.50%
Price Elasticity Coefficient:					
Applied to Usage Charge Rate Revenue	0.00	0.00	0.00	0.00	0.00
Impact Fees					
Sewer	\$ 6,134	6,134	6,134	6,134	6,134
Average Annual Interest Earnings Rate:					
On Fund Balances	0.25%	0.50%	0.75%	1.00%	1.25%
Operating Budget Execution Percentage:					
Personal Services	95%	95%	95%	95%	95%
Variable O&M	100%	100%	100%	100%	100%
Fixed O&M	100%	100%	100%	100%	100%
CIP	100%	100%	100%	100%	100%
Minor Capital Outlay	100%	100%	100%	100%	100%
Operating Fund Reserve Target:					
Number of Months of Annual Operating Expense	3.0	3.0	3.0	3.0	3.0

Sewer Fund - Forecast of Net Revenues

Schedule 7-S

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Rate Revenue Subject to Growth & Rate Adjustments					
2 Sewer Rate Revenue	\$ 6,302,270	6,302,270	6,324,510	6,695,939	7,089,217
3 Additional Rate Revenue From Partial PY Rate Increase	-	-	-	-	-
4 Additional Revenue From Growth	-	22,240	22,351	23,699	25,127
5 Weather Normalization and Other Adjustments	-	-	-	-	-
6 Subtotal: Base Revenue With Growth	\$ 6,302,270	6,324,510	6,346,861	6,719,637	7,114,344
7 Weighted Average Rate Increase	0.00%	0.00%	5.50%	5.50%	5.50%
8 Additional Rate Revenue From Rate Increase	-	-	349,077	369,580	391,289
9 Price Elasticity Adjustment	-	-	-	-	-
10 Total Rate Revenue	\$ 6,302,270	6,324,510	6,695,939	7,089,217	7,505,633
11 Plus: Other Operating Revenue					
12 Other Operating Revenue	\$ 376,490	390,093	403,924	414,908	419,371
13 Equals: Total Operating Revenue	\$ 6,678,760	6,714,603	7,099,863	7,504,126	7,925,004
14 Less: Operating Expenses					
15 Personal Services	\$ (1,053,587)	(1,189,340)	(1,244,479)	(1,302,509)	(1,363,606)
16 Variable O&M	(2,810,780)	(2,874,023)	(2,938,688)	(3,004,809)	(3,072,417)
17 Fixed O&M	(461,148)	(472,230)	(483,597)	(495,255)	(507,214)
18 Equals: Net Operating Income	\$ 2,353,244	2,179,010	2,433,099	2,701,553	2,981,768
19 Plus: Non-Operating Income/(Expense)					
20 Non-Operating Revenue	\$ 1,000	1,000	1,000	1,000	1,000
21 Interest Income	11,883	25,486	39,317	50,301	54,764
24 Sewer Capital Improvement Fund	539,843	540,951	542,064	543,183	544,307
25 Renewal & Replacement	-	-	-	-	-
26 Equals: Net Income	\$ 2,905,970	2,746,447	3,015,480	3,296,037	3,581,839
27 Less: Revenues Excluded From Cash Flow Text					
29 Betterment Fees, SRF, Capital Fund Contributions, R&R	(539,843)	(540,951)	(542,064)	(543,183)	(544,307)
30 Transfers In	-	-	-	-	-
31 Equals: Net Income Available For Debt Service	\$ 2,366,127	2,205,496	2,473,416	2,752,855	3,037,532
32 Cash Flow Test					
33 Net Income Available For Debt Service	\$ 2,353,244	2,179,010	2,433,099	2,701,553	2,981,768
34 Net Interfund Transfers (In - Out)	(127,223)	(127,223)	(127,223)	(883,083)	(1,551,589)
35 Annual Debt Service Payment	(1,796,410)	(1,793,051)	(2,274,456)	(2,274,134)	(2,272,526)
36 Other Below The Line Expenses	-	-	-	-	-
37 Capital Outlay	-	-	-	-	-
38 Net Cash Flow	\$ 429,612	258,737	31,419	(455,664)	(842,347)
39 Unrestricted Working Capital Reserve Fund Test					
40 Balance at Beginning of Fiscal Year	\$ 4,538,204	4,967,816	5,226,553	5,257,972	4,802,309
41 Cash Flow Surplus/(Deficit)	429,612	258,737	31,419	-	-
42 Reserve Fund Balance Used For Cash Flow Deficit	-	-	-	(455,664)	(842,347)
43 Projects Designated To Be Paid With Cash	-	-	-	-	-
44 Projects Paid With Reserve Funds (Non Specified Funds)	-	-	-	-	-
45 Balance At End Of Fiscal Year	\$ 4,967,816	5,226,553	5,257,972	4,802,309	3,959,962
46 Minimum Working Capital Reserve Target	1,113,185	1,165,704	1,198,497	1,421,414	1,623,706
47 Excess Working Capital Above Target	\$ 3,854,632	4,060,849	4,059,475	3,380,895	2,336,256

Sewer Fund - Debt Service Coverage

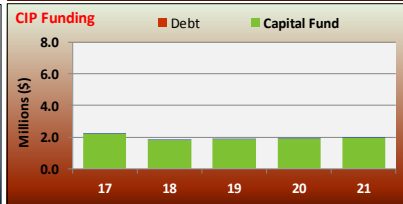
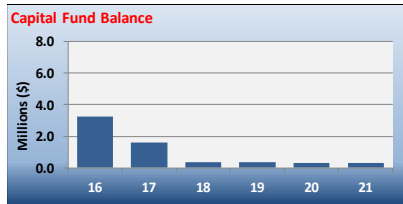
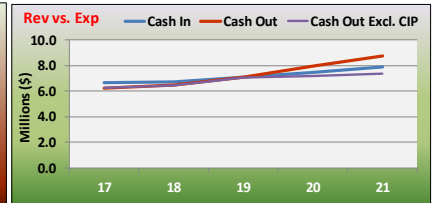
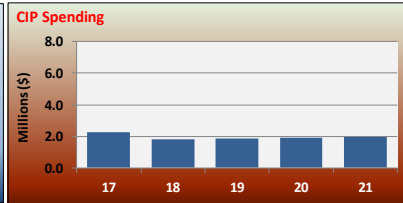
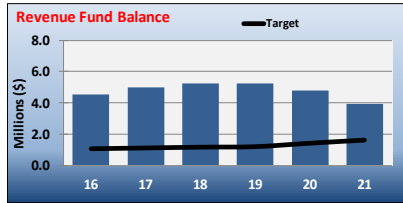
Schedule 8-S

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenues					
Sewer Rate Revenue	\$ 6,302,270	6,324,510	6,695,939	7,089,217	7,505,633
Other Operating Revenue	363,607	363,607	363,607	363,607	363,607
Non-Operating Income	1,000	1,000	1,000	1,000	1,000
Interest Income	11,883	25,486	39,317	50,301	54,764
Total Operating Revenues	\$ 6,678,760	6,714,603	7,099,863	7,504,126	7,925,004
Operating Expenses					
Personal Services	\$ (1,053,587)	(1,189,340)	(1,244,479)	(1,302,509)	(1,363,606)
Variable O&M	(2,810,780)	(2,874,023)	(2,938,688)	(3,004,809)	(3,072,417)
Fixed O&M	(461,148)	(472,230)	(483,597)	(495,255)	(507,214)
Operating Expenses	\$ (4,325,515)	(4,535,593)	(4,666,764)	(4,802,572)	(4,943,236)
Net Revenues Available for Debt Service	\$ 2,353,244	2,179,010	2,433,099	2,701,553	2,981,768
Senior Lien Debt Service	\$ 1,649,716	1,646,495	1,647,919	1,647,596	1,645,989
Senior Lien Debt Coverage	1.43	1.32	1.48	1.64	1.81
Minimum Debt Service Coverage	1.25	1.25	1.25	1.25	1.25
Net Revenues Available for Subordinate Debt Service	\$ 703,529	532,515	785,180	1,053,957	1,335,780
Subordinate Debt Service	\$ 146,694	146,556	626,538	626,538	626,538
Subordinate Debt Service Coverage	4.80	3.63	1.25	1.68	2.13
Minimum Debt Service Coverage	1.25	1.25	1.25	1.25	1.25
All In Debt Service Coverage	1.31	1.22	1.07	1.19	1.31

Sewer Fund - FAMS - Control Panel

Schedule 9-S

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Sewer Rate Increases	0.00%	0.00%	5.50%	5.50%	5.50%
Senior Lien Sewer Coverage	1.43	1.32	1.48	1.64	1.81
CIP \$ Redistribution ▶	\$0.00	-\$1.69	-\$1.94	-\$1.63	-\$2.13
CIP Execution % ▶	100%	100%	100%	100%	100%
Net CIP Funding % ▶	100%	51%	48%	52%	45%
Operating Reserve Mo ▶	3	3	3	3	3
Average Bill	\$51	\$51	\$54	\$57	\$60
Change \$	\$0	\$0	\$3	\$3	\$3



Sewer Fund - Capital Fund Flow of Funds

Schedule 10-S

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Sewer Capital Fund Beginning Balance	\$ 3,267,286	\$ 1,581,094	\$ 1,166,658	\$ 457,570	\$ 228,276
Revenues					
City of Corona	\$ 25,443	25,443	25,443	25,443	25,443
Loan Interest	215,150	210,438	205,440	200,140	194,518
Silverlakes Loan Payment	77,726	82,438	87,436	92,736	98,358
Development Impact Fees	221,524	222,632	223,745	224,864	225,988
Transfer In from Operating Fund	-	-	-	755,860	1,424,366
Transfer In - Riverside County Flood Control	-	840,000	600,000	380,000	-
Interest Income	6,053	6,852	6,068	3,412	2,839
Total Revenues	\$ 545,896	1,387,803	1,148,132	1,682,455	1,971,512
Uses of Funds					
Capital Projects	\$ 2,232,088	1,802,239	1,857,219	1,911,749	1,970,961
Total Use Funds	2,232,088	1,802,239	1,857,219	1,911,749	1,970,961
Sewer Capital Fund End of Year Balance	\$ 1,581,094	1,166,658	457,570	228,276	228,827

Sewer Fund - Long-Term Borrowing Projections

Schedule 11-S

		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Term (Years)		30	30	30	30	30
Interest Rate		4.00%	4.25%	4.50%	4.75%	5.00%
Sources of Funds						
Par Amount		\$ -	-	-	-	-
Interest During Construction		-	-	-	-	-
Total Sources		\$ -	-	-	-	-
Uses of Funds						
Proceeds		-	-	-	-	-
Cost of Issuance	2.00% of Par	-	-	-	-	-
Underwriter's Discount	\$0.00 per \$1,000	-	-	-	-	-
Bond Insurance	0 times total Debt Service	-	-	-	-	-
Capitalized Interest	0 Years Interest	-	-	-	-	-
Debt Service Surety	0.00% of Debt Service	-	-	-	-	-
Debt Service Reserve	1 Years of Debt Service	-	-	-	-	-
Other Costs		-	-	-	-	-
Total Uses		\$ -	-	-	-	-
1 Year Interest		\$0	\$0	\$0	\$0	\$0
Annual Debt Service		\$0	\$0	\$0	\$0	\$0
Total Debt Service		\$0	\$0	\$0	\$0	\$0
Cumulative New Annual Debt Service ⁽¹⁾		\$0	\$0	\$0	\$0	\$0

(1) Cumulative new annual debt service assumes interest-only payments in first year of debt issuance.