



# CITY OF ESCONDIDO

## Water and Wastewater Cost of Service Rate Study

Final Report / January 17, 2017



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# 1 EXECUTIVE SUMMARY

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The City of Escondido (City) engaged Raftelis Financial Consultants, Inc. (RFC) to conduct a comprehensive water and wastewater rate study to determine the water and wastewater rates over the planning period from fiscal year (FY) 2017 to 2021. This report documents the resulting findings, analyses, and proposed changes that were developed with input from and approved by City staff.

## 1.1 WATER UTILITY

### *Summary*

RFC worked closely with City staff to develop a financial plan which sets forth the total revenue adjustments, proposed debt, and capital investment for the next five years. City staff selected a financial plan that entails a 5.5 percent increase per year starting in FY 2017, to cover approximately \$141.5 million in capital expenditures, and \$75 million in proposed bond issues over the five years.

The proposed rate structure remains unchanged and consists of a commodity charge, monthly service charge, a Metropolitan Water District (MWD) Readiness-to-Serve (RTS) Charge, and a San Diego County Water Authority (CWA) Infrastructure Access (IAC) Charge. The monthly service charge recovers approximately 26 percent of the City's total water revenues in FY 2017 and will remain at 26 percent through FY 2021. The commodity rates are tiered for the Single Family Residential, Residential/Agricultural, and Multi-Family Residential classes and non-tiered for the remaining customer classes.

### *System Background*

The City of Escondido's Water Division supplies water to approximately 26,000 residential, commercial, and agricultural customers and sources water from the Escondido-Vista Water Treatment Plant. The water system consists of approximately 25,000 service meters, 370 miles of pipelines, 50 pressure reducing/regulating stations, 5 pump stations, and 11 reservoirs.

### *Financial Plan*

In order to determine the revenue adjustments needed to meet the ongoing expenses of the City and provide fiscal stability, RFC projected the revenue requirements, including operations and maintenance (O&M) expenses, capital expenditures, reserve requirements, etc., for the Study period. O&M expenses include the cost of operating and maintaining the water supply, treatment, storage, and distribution facilities, as well as the cost of providing technical services such as engineering services and other administrative costs of the water system, including meter reading and billing.

**Figure 1-1** shows the proposed revenue adjustments selected for the Study, represented by the green bars on the left axis, the calculated debt coverage, represented by the orange line on the right axis, and the City's target debt coverage of 125 percent, represented by the grey line on the right axis. Although the



graph shows anticipated revenue adjustments for the entire five-year period, the City will review and confirm the necessary revenue adjustments on an annual basis.

**Figure 1-1: Proposed Revenue Adjustments and Debt Coverage – Water Utility**

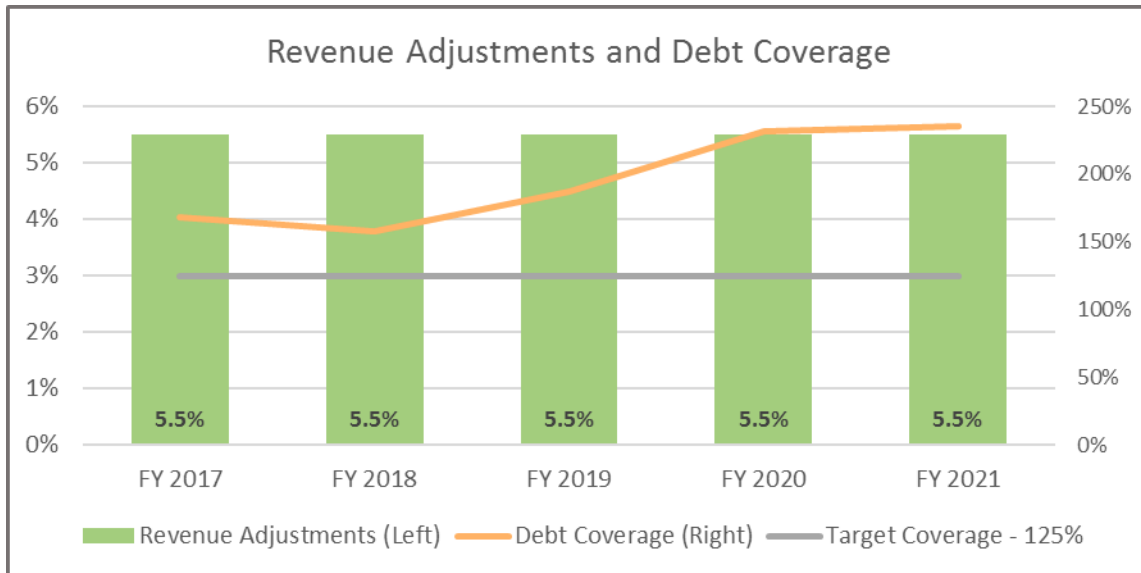
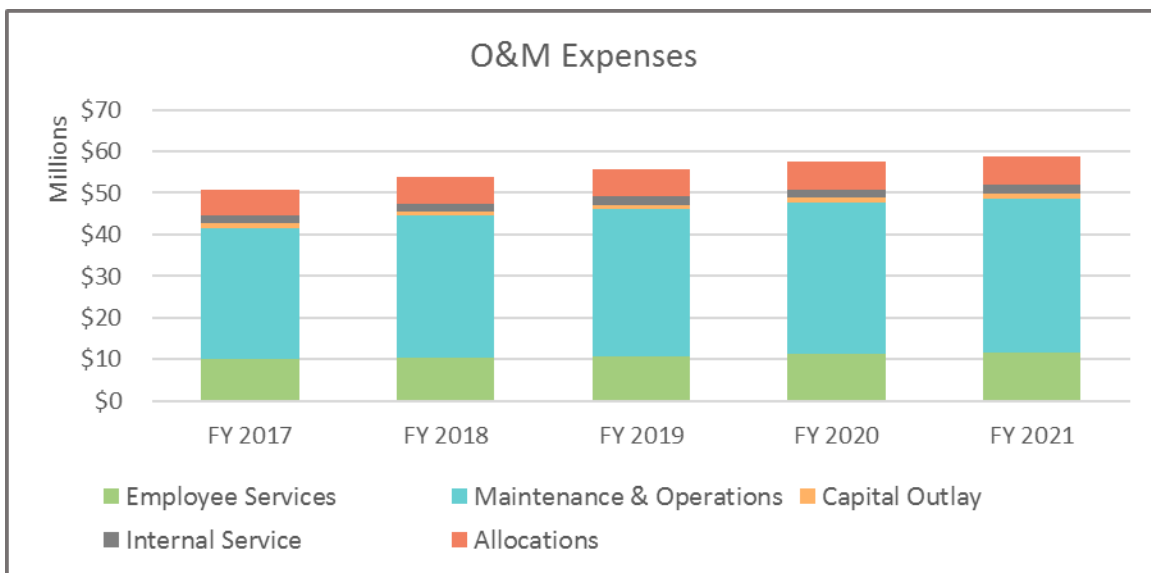


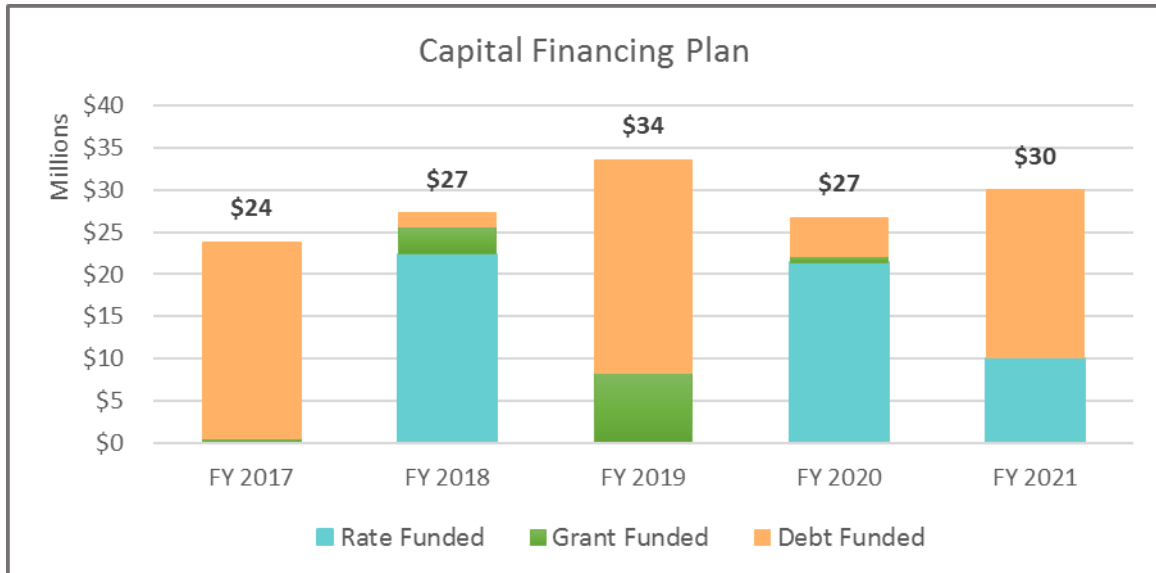
Figure 1-2 shows the City’s projected O&M expenses by category for the Study period.

**Figure 1-2: Projected O&M Expenses – Water Utility**



The City expects approximately \$141.5 million in expenditures for its capital improvement plan (CIP) over the five-year planning period. **Figure 1-3** shows the total amount of capital projects for the Study period and their funding sources; \$75 million will be debt funded.

**Figure 1-3: Projected Capital Financing Plan – Water Utility**

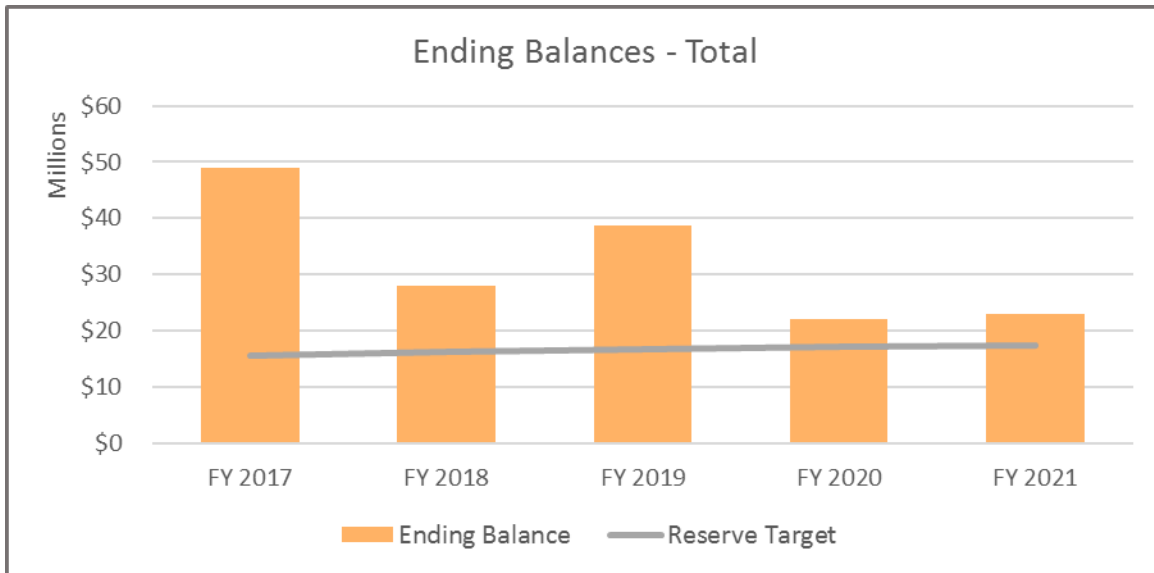


**Figure 1-4** shows the estimated reserves balance for the City’s water funds, represented by the orange bars, and the reserve balance target, represented by the grey line. The City currently maintains reserve levels consisting of the following targets consistent with industry practice:

- Operations Fund – 25% of O&M expenses
- Capital Fund – 25% of average rate-funded CIP

The projected revenue adjustments will allow the City to meet the target reserves.

**Figure 1-4: Projected Reserves Ending Balances – Water Utility**



### ***Proposed Water Rates***

The proposed water rate structure for the City consists of four components: a monthly service charge, a commodity rate, the MWD RTS Charge, and the CWA IAC Charge. The monthly service charge is a fixed charge based on the size of a meter serving a property and is intended to cover costs related to meter reading and maintenance, customer service and billing, and a portion of capacity-related costs. The commodity rate recovers all remaining costs associated with water supply and production, base delivery, and extra capacity. All water supply cost increases are directly passed through to the City's customers. The MWD RTS Charge and CWA IAC Charge are passed through as a component of the fixed charge. Variable water supply costs from CWA, MWD Capacity Charge, CWA Supply Reliability Charge, CWA Customer Service Charge, and CWA Storage Charge are also passed through to the City's customers. Agricultural customers do not pay for the CWA Storage Charge and the CWA Supply Reliability Charge, consistent with CWA policy.

**Table 1-1** shows the proposed monthly service charges by meter size for the next five years, starting in March of every year. **Table 1-2** shows the proposed commodity rates for each customer class and tier. Variable water supply cost increases from CWA are fully passed through to the customer and are not included in the calculation of the commodity rates. **Table 1-3** and **Table 1-4** show the proposed MWD RTS Charge and the CWA IAC Charge, respectively, for FY 2017. For each subsequent year, the City will recalculate these charges based on the rates charged by MWD and CWA.

**Table 1-1: Proposed Monthly Service Charges – Water Utility**

Monthly Service Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$33.48	\$35.33	\$37.28	\$39.34	\$41.51
1"	\$52.47	\$55.36	\$58.41	\$61.63	\$65.02
1 1/2"	\$99.54	\$105.02	\$110.80	\$116.90	\$123.33
2"	\$156.24	\$164.84	\$173.91	\$183.48	\$193.58
3"	\$335.98	\$354.46	\$373.96	\$394.53	\$416.23
4"	\$600.50	\$633.53	\$668.38	\$705.15	\$743.94
6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12
3/4" x 3"	\$335.98	\$354.46	\$373.96	\$394.53	\$416.23
1" x 4"	\$600.50	\$633.53	\$668.38	\$705.15	\$743.94
1 1/2" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
3/4" x 3" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
1" x 4" x 8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12
2" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
2" x 8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12

**Table 1-2: Proposed Commodity Rates – Water Utility**

Usage Charge	Monthly Tier (kgal)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Single Family Residential						
Tier 1	7	\$5.57	\$5.88	\$6.21	\$6.56	\$6.93
Tier 2	15	\$7.39	\$7.80	\$8.23	\$8.69	\$9.17
Tier 3	15+	\$8.48	\$8.95	\$9.45	\$9.97	\$10.52
Residential/Agricultural						
Tier 1	7	\$5.44	\$5.74	\$6.06	\$6.40	\$6.76
Tier 2	7+	\$7.58	\$8.00	\$8.44	\$8.91	\$9.41
Multi-Family Residential						
Tier 1	5	\$5.50	\$5.81	\$6.13	\$6.47	\$6.83
Tier 2	7	\$7.08	\$7.47	\$7.89	\$8.33	\$8.79
Tier 3	7+	\$7.91	\$8.35	\$8.81	\$9.30	\$9.82
Commercial/Industrial/School		\$6.88	\$7.26	\$7.66	\$8.09	\$8.54
Irrigation/Institutional		\$7.28	\$7.69	\$8.12	\$8.57	\$9.05
Landscape Districts		\$9.49	\$10.02	\$10.58	\$11.17	\$11.79
SD Zoo Safari Park		\$7.50	\$7.92	\$8.36	\$8.82	\$9.31
Special Unfiltered		\$6.02	\$6.36	\$6.71	\$7.08	\$7.47
Agricultural Use		\$3.94	\$4.16	\$4.39	\$4.64	\$4.90

**Table 1-3: Proposed MWD RTS Charges – Water Utility**

MWD Readiness-to-Serve Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$2.46	To be determined by MWD			
1"	\$3.94				
1 1/2"	\$7.38				
2"	\$12.79				
3"	\$23.61				
4"	\$40.32				
6"	\$73.75				
8"	\$127.84				
3/4" x 3"	\$25.33				
1" x 4"	\$39.90				
1 1/2" x 6"	\$79.81				
3/4" x 3" x 6"	\$98.04				
1" x 4" x 8"	\$156.27				
2" x 6"	\$87.82				
2" x 8"	\$121.91				

**Table 1-4: Proposed CWA IAC Charges – Water Utility**

CWA Infrastructure Access Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$2.79	To be determined by CWA			
1"	\$4.46				
1 1/2"	\$8.36				
2"	\$14.49				
3"	\$26.78				
4"	\$45.72				
6"	\$83.60				
8"	\$144.86				
3/4" x 3"	\$45.72				
1" x 4"	\$69.68				
1 1/2" x 6"	\$139.00				
3/4" x 3" x 6"	\$139.00				
1" x 4" x 8"	\$223.52				
2" x 6"	\$139.00				
2" x 8"	\$223.52				

Together, the four components of the City's proposed water rates are designed to recover the proportionate costs of providing water service to each customer class, encourage water conservation, and increase the City's financial stability.

## 1.2 WASTEWATER UTILITY

### *Summary*

RFC worked closely with City staff to develop a financial plan which sets forth the total revenue adjustments, proposed debt, and capital investment for the next five years. City staff selected a financial plan that entails a 5.5 percent increase per year starting in FY 2017, approximately \$169.1 million in capital expenditures including recycled water expenditures, and approximately \$84.9 million in proposed State Revolving Fund (SRF) loans.

The proposed rate structure consists of a fixed monthly charge for all customer classes, and a variable charge based on a percentage return factor of water usage.

### *System Background*

The City of Escondido's Wastewater Division safely collects, treats, and disposes of wastewater to produce recycled water. The wastewater system consists of a wastewater treatment plant and disposal facility at the Hale Avenue Resource Recovery Facility (HARRF) and approximately 360 miles of pipelines, 14 pumping stations, more than 360 miles of sewer lines, more than 6,000 sewer manholes, and 14 miles of sewer outfall lines.

### *Financial Plan*

In order to determine the revenue adjustments needed to meet the ongoing expenses of the City and provide fiscal stability, RFC projected the revenue requirements, including operations and maintenance (O&M) expenses, capital expenditures, reserve requirements, etc., for the Study period.

**Figure 1-5** shows the proposed revenue adjustments selected for the Study, represented by the green bars on the left axis, the calculated debt coverage, represented by the orange line on the right axis, and the City's target debt coverage of 125 percent, represented by the grey line on the right axis. Although the graph shows anticipated revenue adjustments for the entire five-year period, the City will review and confirm the necessary revenue adjustments on an annual basis.

**Figure 1-5: Proposed Revenue Adjustments and Debt Coverage – Wastewater Utility**

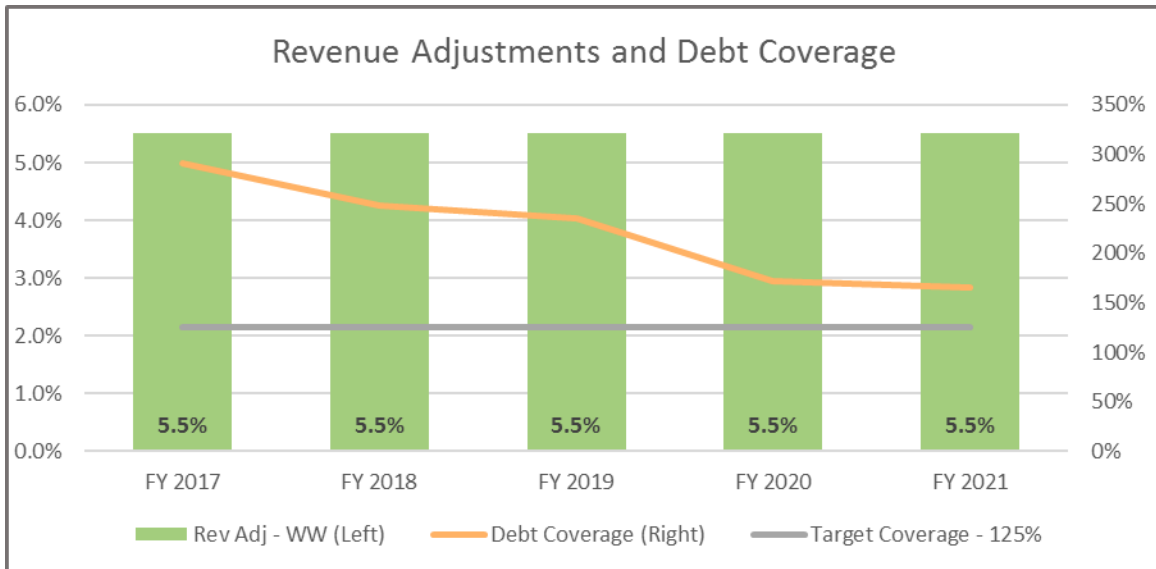
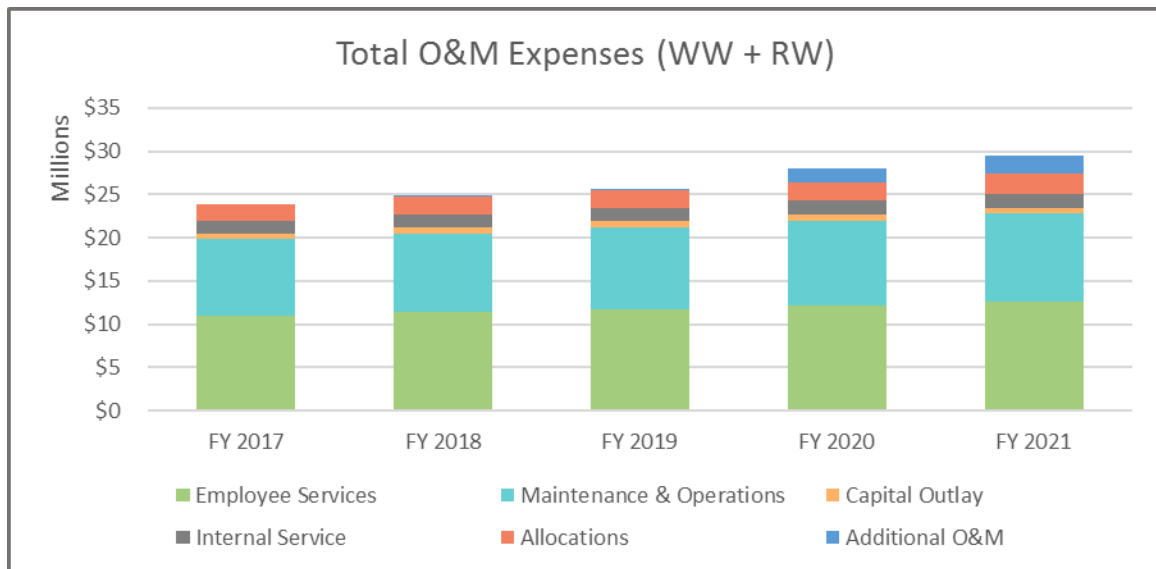


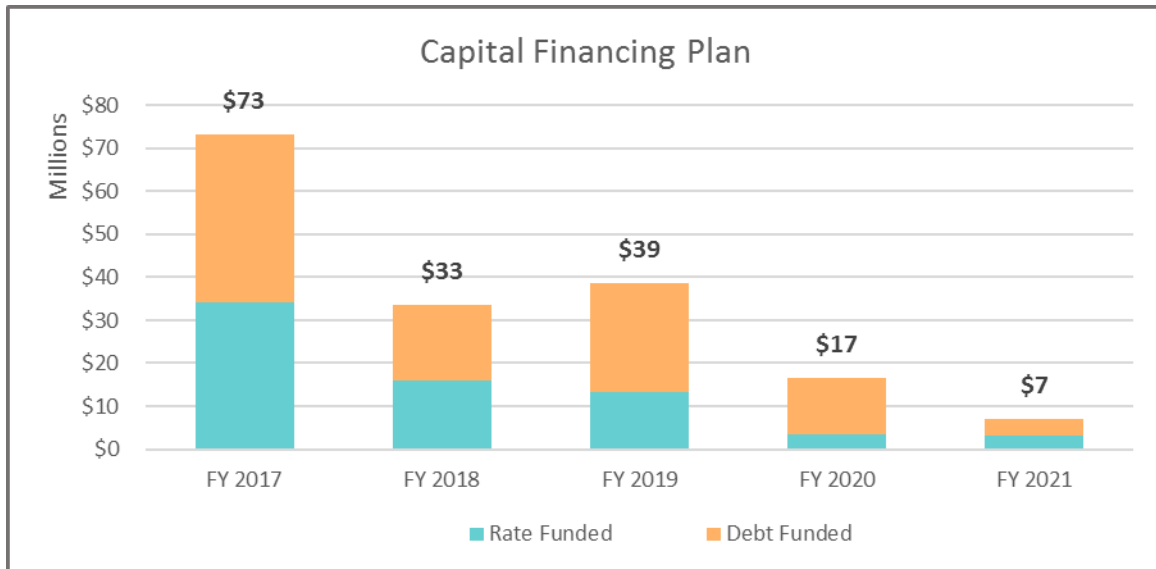
Figure 1-6 shows the City's projected O&M expenses by category for the Study period.

**Figure 1-6: Projected O&M Expenses – Wastewater Utility**



The City expects approximately \$169.1 million in expenditures for its capital improvement plan (CIP) over the five-year planning period. **Figure 1-7** shows the total amount of capital projects for the Study period and their funding sources. Debt funded capital projects are funded through SRF loans.

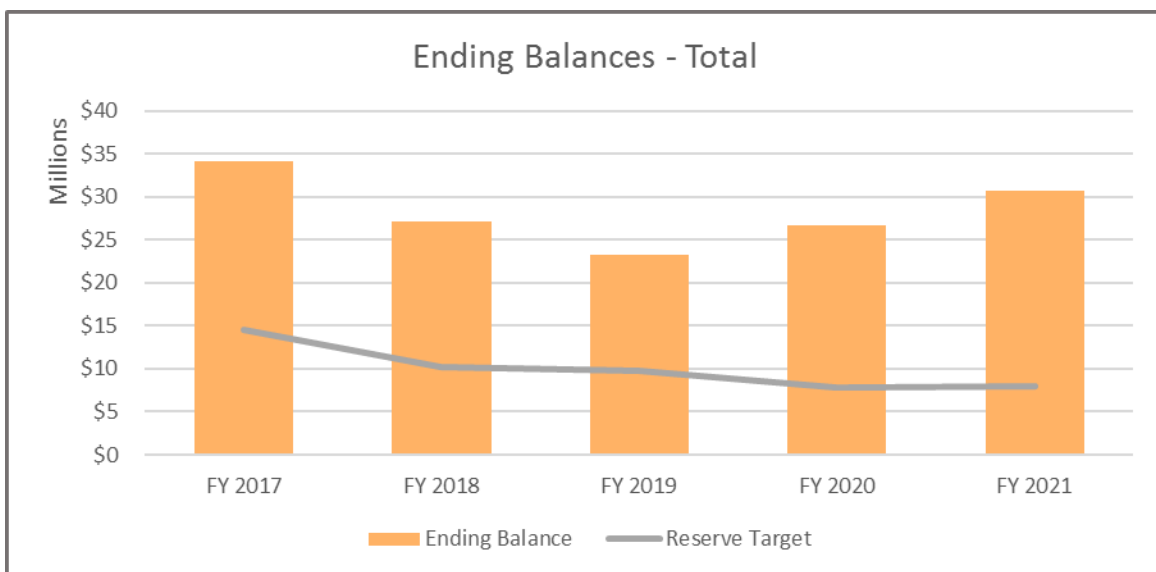
**Figure 1-7: Projected Capital Financing Plan – Wastewater Utility**



**Figure 1-8** shows the estimated reserves balance for the City’s wastewater funds, represented by the orange bars, and the reserve balance target, represented by the grey line. The City currently maintains the following reserve targets consistent with industry practice:

- Operations Fund – 25% of O&M expenses
- Capital Fund – 25% of average rate-funded CIP

**Figure 1-8: Projected Reserves Ending Balances – Wastewater Utility**





### ***Proposed Wastewater Rates***

The proposed rate structure consists of a fixed monthly charge for all customer classes, and a variable charge based on water usage. The rates based on water usage vary amongst classes based on the strength and also the different return factors for different customer classes.

**Table 1-5** shows the proposed wastewater rates for the City in the next five years, starting in March of every year.

**Table 1-5: Proposed Wastewater Rates**

Customer Class	Unit	FY 2017		FY 2018	
		Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$20.91	\$4.14	\$22.07	\$4.37
Multi-Family Residential	unit/mo	\$20.91	\$3.38	\$22.07	\$3.57
Mobile Home	unit/mo	\$20.91	\$2.08	\$22.07	\$2.20
Car Wash/Soft Water Service	unit/mo	\$20.91	\$6.12	\$22.07	\$6.46
Hotel/Motel w/o Dining	unit/mo	\$20.91	\$7.29	\$22.07	\$7.70
Hotel/Motel w/ Dining	unit/mo	\$20.91	\$10.55	\$22.07	\$11.14
Repair Shop/Service Station	unit/mo	\$20.91	\$6.42	\$22.07	\$6.78
Commercial Laundry	unit/mo	\$20.91	\$7.44	\$22.07	\$7.85
Laundromat	unit/mo	\$20.91	\$6.54	\$22.07	\$6.90
Hospital	unit/mo	\$20.91	\$7.03	\$22.07	\$7.42
Grocery Store w/ Meat Dept.	unit/mo	\$20.91	\$12.31	\$22.07	\$12.99
Industrial	unit/mo	\$20.91	\$9.93	\$22.07	\$10.48
Restaurant	unit/mo	\$20.91	\$12.14	\$22.07	\$12.81
All Other Commercial	unit/mo	\$20.91	\$7.43	\$22.07	\$7.84
High School	students/yr	\$28.96		\$30.56	
Elementary/Middle School	students/yr	\$19.31		\$20.38	
Church	100 seats/mo	\$40.22		\$42.44	
Brewery					
Flow	\$/kgal		\$5.56		\$5.87
BOD	\$/lb		\$0.54		\$0.57
TSS	\$/lb		\$0.51		\$0.54
Discharge to Brine Line	unit/mo		\$0.69		\$0.73
Recycled Water	\$/kgal		\$3.85		\$3.85

Customer Class	Unit	FY 2019		FY 2020		FY 2021	
		Fixed	WW Flow	Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$23.29	\$4.62	\$24.58	\$4.88	\$25.94	\$5.15
Multi-Family Residential	unit/mo	\$23.29	\$3.77	\$24.58	\$3.98	\$25.94	\$4.20
Mobile Home	unit/mo	\$23.29	\$2.33	\$24.58	\$2.46	\$25.94	\$2.60
Car Wash/Soft Water Service	unit/mo	\$23.29	\$6.82	\$24.58	\$7.20	\$25.94	\$7.60
Hotel/Motel w/o Dining	unit/mo	\$23.29	\$8.13	\$24.58	\$8.58	\$25.94	\$9.06
Hotel/Motel w/ Dining	unit/mo	\$23.29	\$11.76	\$24.58	\$12.41	\$25.94	\$13.10
Repair Shop/Service Station	unit/mo	\$23.29	\$7.16	\$24.58	\$7.56	\$25.94	\$7.98
Commercial Laundry	unit/mo	\$23.29	\$8.29	\$24.58	\$8.75	\$25.94	\$9.24
Laundromat	unit/mo	\$23.29	\$7.28	\$24.58	\$7.69	\$25.94	\$8.12
Hospital	unit/mo	\$23.29	\$7.83	\$24.58	\$8.27	\$25.94	\$8.73
Grocery Store w/ Meat Dept.	unit/mo	\$23.29	\$13.71	\$24.58	\$14.47	\$25.94	\$15.27
Industrial	unit/mo	\$23.29	\$11.06	\$24.58	\$11.67	\$25.94	\$12.32
Restaurant	unit/mo	\$23.29	\$13.52	\$24.58	\$14.27	\$25.94	\$15.06
All Other Commercial	unit/mo	\$23.29	\$8.28	\$24.58	\$8.74	\$25.94	\$9.23
High School	students/yr	\$32.25		\$34.03		\$35.91	
Elementary/Middle School	students/yr	\$21.51		\$22.70		\$23.95	
Church	100 seats/mo	\$44.78		\$47.25		\$49.85	
Brewery							
Flow	\$/kgal		\$6.20		\$6.55		\$6.92
BOD	\$/lb		\$0.61		\$0.65		\$0.69
TSS	\$/lb		\$0.57		\$0.61		\$0.65
Discharge to Brine Line	unit/mo		\$0.78		\$0.83		\$0.88
Recycled Water	\$/kgal		\$3.85		\$3.85		\$3.85

Together, the two components of the City's proposed wastewater rates are designed to recover the proportionate costs of providing wastewater service to each customer class and increase the City's financial stability.

In order to reduce customer impacts, the City proposed to phase in the wastewater rates over the next five years. **Table 1-6** shows the phase-in wastewater rates schedule, as determined by the City.

**Table 1-6: Phase-In Wastewater Rates Schedule**

Customer Class	Unit	FY 2017		FY 2018	
		Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$20.91	\$4.08	\$22.07	\$4.35
Multi-Family Residential	unit/mo	\$20.91	\$3.37	\$22.07	\$3.57
Mobile Home	unit/mo	\$20.91	\$2.08	\$22.07	\$2.19
Car Wash/Soft Water Service	unit/mo	\$20.91	\$6.12	\$22.07	\$6.46
Hotel/Motel w/o Dining	unit/mo	\$20.91	\$7.29	\$22.07	\$7.69
Hotel/Motel w/ Dining	unit/mo	\$20.91	\$10.55	\$22.07	\$11.13
Repair Shop/Service Station	unit/mo	\$20.91	\$6.42	\$22.07	\$6.77
Commercial Laundry	unit/mo	\$20.91	\$7.44	\$22.07	\$7.85
Laundromat	unit/mo	\$20.91	\$6.54	\$22.07	\$6.90
Hospital	unit/mo	\$20.91	\$7.03	\$22.07	\$7.42
Grocery Store w/ Meat Dept.	unit/mo	\$20.91	\$11.95	\$22.07	\$12.80
Industrial	unit/mo	\$20.91	\$9.83	\$22.07	\$10.43
Restaurant	unit/mo	\$20.91	\$11.78	\$22.07	\$12.63
All Other Commercial	unit/mo	\$20.91	\$7.43	\$22.07	\$7.84
High School	students/yr	\$28.96		\$30.55	
Elementary/Middle School	students/yr	\$19.31		\$20.37	
Church	100 seats/mo	\$40.22		\$42.43	
Brewery					
Flow	\$/kgal		\$5.56		\$5.87
BOD	\$/lb		\$0.54		\$0.56
TSS	\$/lb		\$0.51		\$0.51
Discharge to Brine Line	unit/mo		\$0.69		\$0.72
Recycled Water	\$/kgal		\$3.85		\$3.85

Customer Class	Unit	FY 2019		FY 2020		FY 2021	
		Fixed	WW Flow	Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$23.29	\$4.61	\$24.58	\$4.86	\$25.94	\$5.13
Multi-Family Residential	unit/mo	\$23.29	\$3.76	\$24.58	\$3.97	\$25.94	\$4.19
Mobile Home	unit/mo	\$23.29	\$2.32	\$24.58	\$2.44	\$25.94	\$2.58
Car Wash/Soft Water Service	unit/mo	\$23.29	\$6.81	\$24.58	\$7.19	\$25.94	\$7.58
Hotel/Motel w/o Dining	unit/mo	\$23.29	\$8.11	\$24.58	\$8.56	\$25.94	\$9.03
Hotel/Motel w/ Dining	unit/mo	\$23.29	\$11.74	\$24.58	\$12.39	\$25.94	\$13.07
Repair Shop/Service Station	unit/mo	\$23.29	\$7.15	\$24.58	\$7.54	\$25.94	\$7.95
Commercial Laundry	unit/mo	\$23.29	\$8.28	\$24.58	\$8.74	\$25.94	\$9.22
Laundromat	unit/mo	\$23.29	\$7.28	\$24.58	\$7.68	\$25.94	\$8.10
Hospital	unit/mo	\$23.29	\$7.82	\$24.58	\$8.25	\$25.94	\$8.71
Grocery Store w/ Meat Dept.	unit/mo	\$23.29	\$13.69	\$24.58	\$14.44	\$25.94	\$15.24
Industrial	unit/mo	\$23.29	\$11.05	\$24.58	\$11.66	\$25.94	\$12.30
Restaurant	unit/mo	\$23.29	\$13.51	\$24.58	\$14.26	\$25.94	\$15.04
All Other Commercial	unit/mo	\$23.29	\$8.27	\$24.58	\$8.72	\$25.94	\$9.20
High School	students/yr	\$32.23		\$34.01		\$35.88	
Elementary/Middle School	students/yr	\$21.49		\$22.67		\$23.92	
Church	100 seats/mo	\$44.77		\$47.23		\$49.83	
Brewery							
Flow	\$/kgal		\$6.19		\$6.53		\$6.89
BOD	\$/lb		\$0.60		\$0.63		\$0.67
TSS	\$/lb		\$0.57		\$0.60		\$0.63
Discharge to Brine Line	unit/mo		\$0.76		\$0.81		\$0.85
Recycled Water	\$/kgal		\$3.85		\$3.85		\$3.85

## 2 WATER RATE STUDY

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The following subsections present the findings and recommendations of the Rate Study pertaining to the City's water utility.

### 2.1 WATER SYSTEM

#### *Water System Infrastructure*

The City of Escondido's Water Division supplies water to approximately 26,000 residential, commercial, and agricultural customers and sources water from the Escondido-Vista Water Treatment Plant. The water system consists of approximately 25,000 service meters, 370 miles of pipelines, 50 pressure reducing/regulating stations, 5 pump stations, and 11 reservoirs. A brief description of some of the major facilities is provided below:

**Escondido – Vista Water Treatment Plant (WTP):** The WTP was originally constructed in 1974 and later expanded in 1985 to its current capacity of 90 MGD. The WTP is owned and operated under the Joint Powers Agreement between the City and Vista Irrigation District. Under the agreement, all capital improvement costs are shared 80/20 between the City and Vista and operations costs are shared by the actual water usage.

**Water Reservoirs:** The City owns and maintains 11 untreated and treated reservoirs with a total storage capacity of 24.6 million gallons. The City's two lakes, Lake Dixon and Lake Wohlford, are used to store untreated water before entering the WTP. The lakes are also open to the public for recreational purposes. Treated water from the WTP is stored in the City's remaining reservoirs.

**Water Distribution System:** Treated water is delivered to Vista via the Vista flume and to the City's customers through 370 miles of pipelines. The City uses 50 pressure regulating stations to maintain appropriate pressure in the different pressure zones within the City and 5 pump stations to pump water to customers in high elevation zones.

#### *Water Rates*

The City's current effective water rates in FY 2016 consist of a monthly service charge that varies by meter size and a commodity rate per unit of water, measured in thousand gallons (kgal). The monthly service charge consists of three components: the City's service charge, the MWD RTS Charge, and the CWA IAC Charge. The monthly service charges are shown in **Table 2-1** and the commodity rates are shown in **Table 2-2**.

**Table 2-1: Existing Water Monthly Service Charge (FY 2016)**

Meter Size	City Charge	MWD Charge	CWA Charge	Total
5/8" and 3/4"	\$30.11	\$2.78	\$2.76	\$35.65
1"	\$47.31	\$4.46	\$4.42	\$56.19
1 1/2"	\$90.32	\$8.64	\$8.28	\$107.24
2"	\$141.90	\$13.88	\$14.35	\$170.13
3"	\$305.29	\$27.37	\$26.56	\$359.22
4"	\$546.06	\$42.77	\$45.32	\$634.15
6"	\$1,208.21	\$85.16	\$82.85	\$1,376.22
8"	\$2,068.12	\$136.81	\$143.52	\$2,348.45
3/4" x 3"	\$427.40	\$28.61	\$45.32	\$501.33
1" x 4"	\$649.25	\$45.09	\$69.08	\$763.42
1 1/2" x 6"	\$1,294.33	\$90.18	\$137.82	\$1,522.33
3/4" x 3" x 6"	\$1,294.33	\$110.79	\$137.82	\$1,542.94
1" x 4" x 8"	\$2,068.25	\$176.59	\$221.62	\$2,466.46
2" x 6"	\$1,294.33	\$99.23	\$137.82	\$1,531.38
2" x 8"	\$2,068.25	\$137.77	\$221.62	\$2,427.64
Detector Check	\$51.27	\$0.00	\$0.00	\$51.27

**Table 2-2: Existing Monthly Water Commodity Rates (FY 2016)**

Customer Class	Tier	Rate
Single Family Residential	Tier 1 (0-7 kgal)	\$5.33
	Tier 2 (>7-15 kgal)	\$6.88
	Tier 3 (>15 kgal)	\$8.75
Residential/Agricultural	Tier 1 (0-7 kgal)	\$5.33
	Tier 2 (>7 kgal)	\$7.00
Multi-Family Residential	Tier 1 (0-5 kgal)	\$5.33
	Tier 2 (>5-7 kgal)	\$6.89
	Tier 3 (>7 kgal)	\$8.73
Commercial/Industrial/School	All Usage	\$6.66
Irrigation/Institutional	All Usage	\$7.18
Landscape Districts	All Usage	\$7.18
SD Zoo Safari Park	All Usage	\$6.66
Special Unfiltered	All Usage	\$4.12
Agricultural Use	All Usage	\$3.31

## 2.2 WATER ACCOUNTS AND USAGE

### *Growth Assumptions*

The customer accounts and usage for FY 2016 are used as the basis for projecting water revenues during the Study period. With direction from City staff, RFC assumed that the City will experience no account

growth rate during the five-year planning period of the Study period. To project future year's water usage, RFC assumed an account and corresponding usage growth rate of 0 percent for all five years of the Study period and a demand factor of 113 percent in FY 2017, 103 percent in FY 2018 to 2020, and 100 percent in FY 2021. For example, the projected water usage in FY 2017 will be 13 percent greater than that in FY 2016 since usage in FY 2016 was reduced because of the mandatory conservation goal of 20 percent. Demand in subsequent years is expected to creep upwards. **Table 2-3** shows the account/usage growth rates and demand factors utilized in the Study for the five-year period.

**Table 2-3: Water Account Growth Rates, Usage Growth Rates, and Demand Factors**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Account Growth</b>					
Potable Water	0%	0%	0%	0%	0%
<b>Usage Growth</b>					
Single Family Residential	0%	0%	0%	0%	0%
Residential/Agricultural	0%	0%	0%	0%	0%
Multi-Family Residential	0%	0%	0%	0%	0%
Commercial/Industrial/School	0%	0%	0%	0%	0%
Irrigation/Institutional	0%	0%	0%	0%	0%
Landscape Districts	0%	0%	0%	0%	0%
SD Zoo Safari Park	0%	0%	0%	0%	0%
Special Unfiltered	0%	0%	0%	0%	0%
Agricultural Use	0%	0%	0%	0%	0%
<b>Demand Factor</b>					
Single Family Residential	113%	103%	103%	103%	100%
Residential/Agricultural	113%	103%	103%	103%	100%
Multi-Family Residential	113%	103%	103%	103%	100%
Commercial/Industrial/School	113%	103%	103%	103%	100%
Irrigation/Institutional	113%	103%	103%	103%	100%
Landscape Districts	113%	103%	103%	103%	100%
SD Zoo Safari Park	113%	103%	103%	103%	100%
Special Unfiltered	113%	103%	103%	103%	100%
Agricultural Use	113%	103%	103%	103%	100%

### *Projected Number of Accounts*

RFC projected future year's customer accounts using the account growth rates in **Table 2-3**. The total number of meters for all potable water accounts is shown in **Table 2-4**. Despite utilizing a 0 percent account growth rate, the City estimates that approximately 12 potable water accounts will shift to recycled water accounts in FY 2018. These customers have meter sizes ranging from 2 to 6 inches.

**Table 2-4: Projected Water Customer Accounts**

Customer Accounts	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Potable Water</b>						
5/8" and 3/4"	21,875	21,875	21,875	21,875	21,875	21,875
1"	2,428	2,428	2,428	2,428	2,428	2,428
1 1/2"	935	935	935	935	935	935
2"	867	867	862	862	862	862
3"	51	51	50	50	50	50
4"	30	30	27	27	27	27
6"	5	5	2	2	2	2
8"	3	3	3	3	3	3
3/4" x 3"	11	11	11	11	11	11
1" x 4"	11	11	11	11	11	11
1 1/2" x 6"	0	0	0	0	0	0
3/4" x 3" x 6"	0	0	0	0	0	0
1" x 4" x 8"	1	1	1	1	1	1
2" x 6"	8	8	8	8	8	8
2" x 8"	0	0	0	0	0	0
Detector Check	340	340	340	340	340	340
<b>Total</b>	<b>26,565</b>	<b>26,565</b>	<b>26,553</b>	<b>26,553</b>	<b>26,553</b>	<b>26,553</b>

### Water Usage

RFC projected future year's water usage using the usage growth rates and demand factors in **Table 2-3**. The total projected usage for all customer classes is shown in **Table 2-5**.

**Table 2-5: Projected Water Usage**

Water Usage (kgal)	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Single Family Residential</b>						
Tier 1 (0-7 kgal)	1,226,998	1,380,373	1,421,784	1,464,438	1,508,371	1,508,371
Tier 2 (> 7-15 kgal)	605,306	680,969	701,398	722,440	744,113	744,113
Tier 3 (>15 kgal)	461,874	519,609	535,197	551,253	567,790	567,790
<b>Subtotal</b>	<b>2,294,178</b>	<b>2,580,950</b>	<b>2,658,379</b>	<b>2,738,130</b>	<b>2,820,274</b>	<b>2,820,274</b>
<b>Residential/Agricultural</b>						
Tier 1 (0-7 kgal)	4,377	4,924	5,071	5,223	5,380	5,380
Tier 2 (>7 kgal)	18,098	20,361	20,972	21,601	22,249	22,249
<b>Subtotal</b>	<b>22,475</b>	<b>25,284</b>	<b>26,043</b>	<b>26,824</b>	<b>27,629</b>	<b>27,629</b>
<b>Multi-Family Residential</b>						
Tier 1 (0-5 kgal)	780,220	877,748	904,080	931,203	959,139	959,139
Tier 2 (>5-7 kgal)	139,158	156,552	161,249	166,086	171,069	171,069
Tier 3 (>7 kgal)	196,567	221,138	227,772	234,605	241,643	241,643
<b>Subtotal</b>	<b>1,115,945</b>	<b>1,255,438</b>	<b>1,293,101</b>	<b>1,331,894</b>	<b>1,371,851</b>	<b>1,371,851</b>
<b>Commercial/Industrial/School</b>	686,523	772,338	795,509	819,374	843,955	843,955
<b>Irrigation/Institutional</b>	341,147	383,790	395,304	407,163	419,378	419,378
<b>Landscape Districts</b>	13,243	14,898	15,345	15,806	16,280	16,280
<b>SD Zoo Safari Park</b>	120,764	135,860	139,935	144,133	148,457	148,457
<b>Special Unfiltered</b>	216,464	243,522	250,828	258,352	266,103	266,103
<b>Agricultural Use</b>	822,775	925,622	953,391	981,992	1,011,452	1,011,452
<b>Total</b>	<b>5,633,514</b>	<b>6,337,703</b>	<b>6,527,834</b>	<b>6,723,669</b>	<b>6,925,379</b>	<b>6,925,379</b>



## 2.3 WATER REVENUE REQUIREMENTS

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under the current rates, miscellaneous revenues, O&M expenses, capital expenditures, transfers between funds, and reserve requirements. This subsection of the Report provides a discussion of the projected revenues, O&M expenses, capital expenditures, capital financing plan, debt service requirements, and revenue adjustments necessary to ensure the financial stability of the water enterprise. The water system revenues and expenditures are discussed from a City perspective and the discussion on required revenue adjustments relates exclusively to the City's customers.

### *Growth Assumptions and Escalation Factors*

To estimate the water utility's future year's revenues and expenditures, RFC utilized growth assumptions and escalation factors for expenses. **Table 2-6** shows the revenue growth assumptions and escalation factors that were used in the Study.

**Table 2-6: Water Growth Assumptions and Escalation Factors**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Revenue Growth</b>					
Non-Rate Revenues	1%	1%	1%	1%	1%
Reserve Interest Rate	1%	1%	1%	1%	1%
<b>Escalation Factors</b>					
General	3%	3%	3%	3%	3%
Salary	3%	3%	3%	3%	3%
Benefits	5%	5%	5%	5%	5%
Utilities	5%	5%	5%	5%	5%
Water Costs	5%	5%	5%	5%	5%
Capital	3%	3%	3%	3%	3%

### *Water System Revenues*

The City's Water Division derives its annual operating and capital revenues from a number of sources. The principal sources of operating revenues from rates are the water service charges from the City's users. Other revenue sources include miscellaneous operating revenues such as installation fees, penalties, fishing licenses, etc. Capital revenue sources include reimbursements from Vista Irrigation District for their share of the capital expenses, investment earnings, etc.

**Table 2-7** shows the water utility's operating revenues and **Table 2-8** shows the capital revenues for the Study period.

**Table 2-7: Projected Water Operating Revenues**

Operating Revenues - Fund 555	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Federal Grants	\$500,000	\$0	\$0	\$0	\$0
2 Concessions - Lake Dixon	\$85,000	\$85,850	\$86,709	\$87,576	\$88,451
3 Fishing - Lake Dixon	\$230,000	\$232,300	\$234,623	\$236,969	\$239,339
4 Camping - Lake Dixon	\$155,000	\$156,550	\$158,116	\$159,697	\$161,294
5 Entry Fees - Lake Dixon	\$115,000	\$116,150	\$117,312	\$118,485	\$119,669
6 Boat Rentals - Lake Dixon	\$185,000	\$186,850	\$188,719	\$190,606	\$192,512
7 State Fishing Licenses	\$9,000	\$9,090	\$9,181	\$9,273	\$9,365
8 Fishing - Lake Wohlford	\$80,000	\$80,800	\$81,608	\$82,424	\$83,248
9 Boat Rentals - Lake Wohlford	\$30,000	\$30,300	\$30,603	\$30,909	\$31,218
10 Reimb from Outside Agencies	\$0	\$0	\$0	\$0	\$0
11 Water Usage	\$38,500,000	\$38,546,385	\$39,702,776	\$40,893,859	\$40,893,859
12 Water Service	\$15,200,000	\$14,965,165	\$14,965,165	\$14,965,165	\$14,965,165
13 Meter Installation	\$50,000	\$50,500	\$51,005	\$51,515	\$52,030
14 Penalties (Late Fee)	\$1,000,000	\$1,010,000	\$1,020,100	\$1,030,301	\$1,040,604
15 Water Connection Fees	\$375,000	\$378,750	\$382,538	\$386,363	\$390,227
16 VID Rincon Filtration Charge	\$1,300,000	\$1,313,000	\$1,326,130	\$1,339,391	\$1,352,785
17 Water Line Develop Reimb	\$0	\$0	\$0	\$0	\$0
18 VID - Canal Reimbursement	\$100,000	\$101,000	\$102,010	\$103,030	\$104,060
19 Electrical Energy	\$75,000	\$75,750	\$76,508	\$77,273	\$78,045
20 Electrical Energy - Indian Aff	\$0	\$0	\$0	\$0	\$0
21 Temporary Meter Installations	\$0	\$0	\$0	\$0	\$0
22 CIP Reimbursement	\$0	\$0	\$0	\$0	\$0
23 Pension Expense-GASB 68	\$0	\$0	\$0	\$0	\$0
24 Other Interest-Non Investment	\$0	\$0	\$0	\$0	\$0
25 Contributions	\$0	\$0	\$0	\$0	\$0
26 Developer Contributions	\$0	\$0	\$0	\$0	\$0
27 Interest-Trustee	\$0	\$0	\$0	\$0	\$0
28 Investment Earnings	\$130,400	\$341,484	\$283,488	\$249,662	\$186,751
29 Rent	\$80,000	\$80,800	\$81,608	\$82,424	\$83,248
30 Bank Acct Analysis Fees-Contra	\$0	\$0	\$0	\$0	\$0
31 Cr. Card Merchant Fees-Contra	\$0	\$0	\$0	\$0	\$0
32 Cr Card Clearing-Dixon Lake	\$0	\$0	\$0	\$0	\$0
33 Damages - City Property	\$0	\$0	\$0	\$0	\$0
34 Misc Over / Short	\$0	\$0	\$0	\$0	\$0
35 Bad Debt Recoveries	\$0	\$0	\$0	\$0	\$0
36 Invest-Unrealized Gain or Loss	\$0	\$0	\$0	\$0	\$0
37 Gain/Loss Disp of Fixed Assets	\$0	\$0	\$0	\$0	\$0
38 Bad Debt Offset - Contra Acct	\$0	\$0	\$0	\$0	\$0
39 Prior Period Exp/Rev	\$0	\$0	\$0	\$0	\$0
40 Other Revenue	\$30,000	\$30,300	\$30,603	\$30,909	\$31,218
41 Clearing Account	\$0	\$0	\$0	\$0	\$0
42 Transfers In	\$0	\$0	\$0	\$0	\$0
43 Transfers Out	(\$7,200)	\$0	\$0	\$0	\$0
44 <b>Total</b>	<b>\$58,222,200</b>	<b>\$57,791,024</b>	<b>\$58,928,799</b>	<b>\$60,125,831</b>	<b>\$60,103,091</b>

**Table 2-8: Projected Water Capital Revenues**

Capital Revenues - Fund 556	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Rincon Share Fire Station #5	\$0	\$0	\$0	\$0	\$0
2 State Grants	\$0	\$0	\$0	\$0	\$0
3 Reimb from Outside Agencies	\$0	\$0	\$0	\$0	\$0
4 Interest-Trustee	\$0	\$0	\$0	\$0	\$0
5 Investment Earnings	\$0	\$0	\$0	\$0	\$0
6 Trustee Invest-Unreal Gain/Loss	\$0	\$0	\$0	\$0	\$0
7 Clearing Account	\$0	\$0	\$0	\$0	\$0
8 VID Reimbursement	\$1,641,305	\$720,744	\$2,764,599	\$2,999,481	\$3,396,673
9 Transfers In	\$7,200	\$0	\$0	\$0	\$0
10 Transfers Out	\$0	\$0	\$0	\$0	\$0
<b>11 Total</b>	<b>\$1,648,505</b>	<b>\$720,744</b>	<b>\$2,764,599</b>	<b>\$2,999,481</b>	<b>\$3,396,673</b>

### *Water System Expenditures*

For sound financial operation of the City's water system, the revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include water purchase costs, O&M expenses, CIP expenditures, principal and interest payments on existing debt, and other obligations.

### *Operation and Maintenance Expenses*

O&M expenditures include the cost of operating and maintaining the water supply, treatment, storage, and distribution facilities, as well as the costs of providing technical services such as laboratory services and other administrative costs of the water system such as meter reading and billing. These costs are a normal obligation of the system and are met from operating revenues as they are incurred.

The City's O&M budget is shown in **Table 2-9**. The financial plan for the Study period is from FY 2017 to 2021. The O&M expenditures incorporate the inflationary factors in **Table 2-6**.

**Table 2-9: Projected Water O&M Expenses**

Operating Expenditures - Fund 555	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Water - Dept. 410</b>					
<b>2 Employee Services</b>					
3 Regular Full-Time	\$4,618,405	\$4,756,957	\$4,899,666	\$5,046,656	\$5,198,056
4 Contract Funded	\$211,855	\$218,211	\$224,757	\$231,500	\$238,445
5 Temporary Part-time	\$14,335	\$14,765	\$15,208	\$15,664	\$16,134
6 Overtime	\$203,160	\$209,255	\$215,532	\$221,998	\$228,658
7 Other Employee Overhead	\$166,450	\$174,773	\$183,511	\$192,687	\$202,321
8 PERS	\$1,480,390	\$1,554,410	\$1,632,130	\$1,713,736	\$1,799,423
9 Medical	\$610,320	\$640,836	\$672,878	\$706,522	\$741,848
10 Workers' Compensation	\$381,400	\$400,470	\$420,494	\$441,518	\$463,594
11 Flexible Benefits	\$52,435	\$55,057	\$57,810	\$60,700	\$63,735
<b>12 Maintenance &amp; Operations</b>					
13 Office/Operating Supplies	\$1,039,500	\$1,070,685	\$1,102,806	\$1,135,890	\$1,169,966
14 Purchased Water	\$23,000,000	\$25,027,327	\$25,694,778	\$26,384,590	\$26,513,517
15 Chemicals	\$2,000,000	\$2,163,000	\$2,339,285	\$2,529,936	\$2,656,433
16 Minor Tools & Equipment	\$25,800	\$26,574	\$27,371	\$28,192	\$29,038
17 Maintenance of Equipment	\$264,300	\$272,229	\$280,396	\$288,808	\$297,472
18 Major Maintenance	\$455,000	\$468,650	\$482,710	\$497,191	\$512,107
19 Professional Services	\$875,885	\$902,162	\$929,226	\$957,103	\$985,816
20 Other Building Repairs/Maint.	\$0	\$0	\$0	\$0	\$0
21 Permits	\$0	\$0	\$0	\$0	\$0
22 Other Mail	\$0	\$0	\$0	\$0	\$0
23 Training & Meetings	\$32,250	\$33,218	\$34,214	\$35,240	\$36,298
24 Mileage Reimbursement	\$600	\$618	\$637	\$656	\$675
25 Dues & Subscriptions	\$38,620	\$39,779	\$40,972	\$42,201	\$43,467
26 Auto Allowance	\$5,100	\$5,253	\$5,411	\$5,573	\$5,740
27 Advertising & Printing	\$38,500	\$39,655	\$40,845	\$42,070	\$43,332
28 Utilities	\$676,830	\$731,992	\$791,649	\$856,168	\$898,977
29 City Water	\$1,500,000	\$1,622,250	\$1,754,463	\$1,897,452	\$1,992,325
30 Other Telephone	\$22,400	\$23,072	\$23,764	\$24,477	\$25,211
31 Donated Assets	\$0	\$0	\$0	\$0	\$0
32 Rent	\$326,765	\$336,568	\$346,665	\$357,065	\$367,777
33 Tuition	\$0	\$0	\$0	\$0	\$0
34 Other Expense	\$181,920	\$187,378	\$192,999	\$198,789	\$204,753
35 Software	\$203,395	\$209,497	\$215,782	\$222,255	\$228,923
36 Minor Office Equipment	\$15,800	\$16,274	\$16,762	\$17,265	\$17,783
37 Interest Expense	\$79,720	\$82,112	\$84,575	\$87,112	\$89,726
38 Other Duplicating	\$0	\$0	\$0	\$0	\$0
<b>39 Capital Outlay</b>					
40 Other Capital Outlay	\$1,028,820	\$1,059,685	\$1,091,475	\$1,124,219	\$1,157,946
41 Capital Contra Clearing	\$0	\$0	\$0	\$0	\$0
42 Land Acquisition	\$0	\$0	\$0	\$0	\$0
43 Construction	\$0	\$0	\$0	\$0	\$0
<b>44 Internal Service</b>					
45 Building Maintenance	\$174,905	\$180,152	\$185,557	\$191,123	\$196,857
46 Fleet Services	\$513,130	\$528,524	\$544,380	\$560,711	\$577,532
47 Duplicating	\$5,205	\$5,361	\$5,522	\$5,688	\$5,858
48 Telecommunications	\$32,125	\$33,089	\$34,081	\$35,104	\$36,157
49 Radio Communications	\$10,525	\$10,841	\$11,166	\$11,501	\$11,846
50 Mail Services	\$5,735	\$5,907	\$6,084	\$6,267	\$6,455
51 Office Automation	\$75,675	\$77,945	\$80,284	\$82,692	\$85,173
52 Insurance	\$460,630	\$474,449	\$488,682	\$503,343	\$518,443

**Table 2-10: Projected Water O&M Expenses (cont'd)**

	Operating Expenditures - Fund 555	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
53 <b>Allocations</b>						
54 Allocations In		\$6,556,265	\$6,752,953	\$6,955,542	\$7,164,208	\$7,379,134
55 Allocations Out		(\$311,150)	(\$320,485)	(\$330,099)	(\$340,002)	(\$350,202)
56 <b>Subtotal</b>		<b>\$47,073,000</b>	<b>\$50,091,444</b>	<b>\$51,799,967</b>	<b>\$53,583,869</b>	<b>\$54,696,749</b>
57 <b>Canal - Dept. 412</b>						
58 <b>Employee Services</b>						
59 Regular Full-Time		\$289,210	\$297,886	\$306,823	\$316,028	\$325,508
60 Overtime		\$32,300	\$33,269	\$34,267	\$35,295	\$36,354
61 Other Employee Overhead		\$11,305	\$11,870	\$12,464	\$13,087	\$13,741
62 PERS		\$89,600	\$94,080	\$98,784	\$103,723	\$108,909
63 Medical		\$73,640	\$77,322	\$81,188	\$85,248	\$89,510
64 Workers' Compensation		\$23,240	\$24,402	\$25,622	\$26,903	\$28,248
65 Flexible Benefits		\$17,345	\$18,212	\$19,123	\$20,079	\$21,083
66 <b>Maintenance &amp; Operations</b>						
67 Office/Operating Supplies		\$92,540	\$95,316	\$98,176	\$101,121	\$104,155
68 Minor Tools & Equipment		\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
69 Maintenance of Equipment		\$15,500	\$15,965	\$16,444	\$16,937	\$17,445
70 Professional Services		\$62,800	\$64,684	\$66,625	\$68,623	\$70,682
71 Dues & Subscriptions		\$200	\$206	\$212	\$219	\$225
72 Utilities		\$700	\$757	\$819	\$885	\$930
73 Other Telephone		\$7,500	\$7,725	\$7,957	\$8,195	\$8,441
74 Other Expense		\$500	\$515	\$530	\$546	\$563
75 <b>Capital Outlay</b>						
76 Other Capital Outlay		\$24,000	\$24,720	\$25,462	\$26,225	\$27,012
77 <b>Internal Service</b>						
78 Fleet Services		\$73,545	\$75,751	\$78,024	\$80,365	\$82,776
79 Office Automation		\$3,835	\$3,950	\$4,069	\$4,191	\$4,316
80 Insurance		\$49,565	\$51,052	\$52,584	\$54,161	\$55,786
81 <b>Allocations</b>						
82 Allocations In		\$18,165	\$18,710	\$19,271	\$19,849	\$20,445
83 <b>Subtotal</b>		<b>\$888,490</b>	<b>\$919,483</b>	<b>\$951,625</b>	<b>\$984,959</b>	<b>\$1,019,506</b>
84 <b>Lakes - Dept. 414</b>						
85 <b>Employee Services</b>						
86 Regular Full-Time		\$647,110	\$666,523	\$686,519	\$707,115	\$728,328
87 Temporary Part-time		\$633,735	\$652,747	\$672,329	\$692,499	\$713,274
88 Overtime		\$12,400	\$12,772	\$13,155	\$13,550	\$13,956
89 Other Employee Overhead		\$36,120	\$37,926	\$39,822	\$41,813	\$43,904
90 PERS		\$276,485	\$290,309	\$304,825	\$320,066	\$336,069
91 Medical		\$80,220	\$84,231	\$88,443	\$92,865	\$97,508
92 Workers' Compensation		\$88,435	\$92,857	\$97,500	\$102,375	\$107,493
93 Flexible Benefits		\$9,000	\$9,450	\$9,923	\$10,419	\$10,940
94 <b>Maintenance &amp; Operations</b>						
95 Office/Operating Supplies		\$116,800	\$120,304	\$123,913	\$127,631	\$131,459
96 Minor Tools & Equipment		\$28,150	\$28,995	\$29,864	\$30,760	\$31,683
97 Maintenance of Equipment		\$26,900	\$27,707	\$28,538	\$29,394	\$30,276
98 Professional Services		\$309,450	\$318,734	\$328,296	\$338,144	\$348,289
99 Training & Meetings		\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
100 Dues & Subscriptions		\$500	\$515	\$530	\$546	\$563
101 Advertising & Printing		\$11,000	\$11,330	\$11,670	\$12,020	\$12,381
102 Utilities		\$62,000	\$67,053	\$72,518	\$78,428	\$82,349
103 Other Telephone		\$4,000	\$4,120	\$4,244	\$4,371	\$4,502
104 Donated Assets		\$0	\$0	\$0	\$0	\$0

**Table 2-11: Projected Water O&M Expenses (cont'd)**

	Operating Expenditures - Fund 555	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
105 <b>Capital Outlay</b>						
106 Other Capital Outlay		\$10,000	\$10,300	\$10,609	\$10,927	\$11,255
107 Building and Improvements		\$14,000	\$14,420	\$14,853	\$15,298	\$15,757
108 Capital Contra Clearing		\$0	\$0	\$0	\$0	\$0
109 <b>Internal Service</b>						
110 Building Maintenance		\$134,350	\$138,381	\$142,532	\$146,808	\$151,212
111 Fleet Services		\$142,905	\$147,192	\$151,608	\$156,156	\$160,841
112 Duplicating		\$9,315	\$9,594	\$9,882	\$10,179	\$10,484
113 Telecommunications		\$17,485	\$18,010	\$18,550	\$19,106	\$19,680
114 Radio Communications		\$13,805	\$14,219	\$14,646	\$15,085	\$15,538
115 Mail Services		\$125	\$129	\$133	\$137	\$141
116 Office Automation		\$11,905	\$12,262	\$12,630	\$13,009	\$13,399
117 Insurance		\$88,890	\$91,557	\$94,303	\$97,133	\$100,046
118 <b>Allocations</b>						
119 Allocations In		\$3,780	\$3,893	\$4,010	\$4,131	\$4,254
120 <b>Subtotal</b>		<b>\$2,791,865</b>	<b>\$2,888,619</b>	<b>\$2,989,026</b>	<b>\$3,093,242</b>	<b>\$3,198,959</b>
121 <b>Total</b>		<b>\$50,753,355</b>	<b>\$53,899,546</b>	<b>\$55,740,618</b>	<b>\$57,662,070</b>	<b>\$58,915,214</b>

### Water Supply Cost

The following section will explain the method that was used for calculating the water supply cost. Table 2-12 shows the purchased water rates and charges, including MWD and CWA fixed charges and variable charges for water from CWA and local sources. All rates and charges, except local water rates, are held constant in anticipation that any increases in wholesale rates and charges will be passed through to customers when they occur.

**Table 2-12: Purchased Water Rates and Charges**

	Purchased Water Rates	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 <b>Annual Fixed Charges</b>						
2 MWD Readiness-to-Serve Charge		\$1,032,324	\$1,083,940	\$1,138,137	\$1,195,044	\$1,254,796
3 MWD Capacity Charge		\$437,802	\$437,802	\$437,802	\$437,802	\$437,802
4 CWA Supply Reliability Charge		\$963,852	\$963,852	\$963,852	\$963,852	\$963,852
5 CWA Customer Service Charge		\$1,168,776	\$1,168,776	\$1,168,776	\$1,168,776	\$1,168,776
6 CWA Storage Charge		\$2,680,608	\$2,680,608	\$2,680,608	\$2,680,608	\$2,680,608
7 CWA Infrastructure Access Charge		\$1,180,110	\$1,239,116	\$1,301,071	\$1,366,125	\$1,434,431
8 <b>Subtotal</b>		<b>\$7,463,472</b>	<b>\$7,574,094</b>	<b>\$7,690,246</b>	<b>\$7,812,207</b>	<b>\$7,940,265</b>
9 <b>Variable Charges</b>						
10 CWA Transportation Rate		\$108	\$108	\$108	\$108	\$108
11 CWA Mended Untreated M&I Supply Rate		\$818	\$818	\$818	\$818	\$818
12 CWA Mended M&I Treatment Rate		\$285	\$285	\$285	\$285	\$285
13 CWA Special Agricultural Water Rate Untreated		\$630	\$630	\$630	\$630	\$630
14 CWA Special Agricultural Water Rate Treated		\$915	\$915	\$915	\$915	\$915
15 Local Water		\$15	\$16	\$17	\$17	\$18

Table 2-13 shows the total demand, total production, and purchased amount of water by source for the Study period. Agricultural usage is eligible for Temporary Special Agricultural Water Rate (TSAWR). The water loss percentage represents the difference between the total water production (the amount of water

the City pumps or imports) and the total water demand (the amount of water the City's customers use) that results from distribution line and hydrant testing, leaks, inaccurate meters, etc. The water loss percentage is used to calculate the total water production; the total water demanded is 2 percent less than the total water produced to account for water loss.

**Table 2-13: Total Water Demand and Production**

Water Supply	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Total Usage, less Local (AF)	18,471	19,055	19,656	20,275	20,275
2 Local Water Usage (AF)	980	980	980	980	980
3 TSAWR Eligible (AF)	2,841	2,926	3,014	3,104	3,104
4 <b>Total Demand</b>	<b>22,292</b>	<b>22,961</b>	<b>23,649</b>	<b>24,359</b>	<b>24,359</b>
5 Water Loss	2%	2%	2%	2%	2%
6 Total Production, less Local (AF)	18,848	19,443	20,057	20,688	20,688
7 Local Water Availability (AF)	1,000	1,000	1,000	1,000	1,000
8 SAWR Eligible (AF)	2,899	2,986	3,075	3,168	3,168
9 <b>Total Production</b>	<b>22,747</b>	<b>23,429</b>	<b>24,132</b>	<b>24,856</b>	<b>24,856</b>
10 Purchased Water (AF)					
11 Local Water	1,000	1,000	1,000	1,000	1,000
12 Purchased from CWA	18,848	19,443	20,057	20,688	20,688
13 Purchased from CWA, TSAWR	2,899	2,986	3,075	3,168	3,168

**Table 2-14** summarizes the total water supply costs for each source. The annual fixed charges for water supply are derived from **Table 2-12**, and the variable costs are calculated by multiplying the variable charges with the total water purchased and pumped from **Table 2-13**.

**Table 2-14: Total Water Supply Costs by Source**

Water Supply Costs	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Local Water Costs	\$15,000	\$15,750	\$16,538	\$17,364	\$18,233
2 CWA Commodity Costs	\$14,752,994	\$15,223,334	\$15,707,784	\$16,206,768	\$16,206,768
3 CWA TSAWR Commodity Costs	\$2,137,864	\$2,202,000	\$2,268,060	\$2,336,102	\$2,336,102
4 Exchanges with VID	\$12,149	\$12,149	\$12,149	\$12,149	\$12,149
5 Exchanges with Rincon	\$0	\$0	\$0	\$0	\$0
6 MWD Readiness-to-Serve Charge	\$1,032,324	\$1,083,940	\$1,138,137	\$1,195,044	\$1,254,796
7 MWD Capacity Charge	\$437,802	\$437,802	\$437,802	\$437,802	\$437,802
8 CWA Supply Reliability Charge	\$963,852	\$963,852	\$963,852	\$963,852	\$963,852
9 CWA Customer Service Charge	\$1,168,776	\$1,168,776	\$1,168,776	\$1,168,776	\$1,168,776
10 CWA Storage Charge	\$2,680,608	\$2,680,608	\$2,680,608	\$2,680,608	\$2,680,608
11 CWA Infrastructure Access Charge	\$1,180,110	\$1,239,116	\$1,301,071	\$1,366,125	\$1,434,431
12 <b>Total</b>	<b>\$24,381,480</b>	<b>\$25,027,327</b>	<b>\$25,694,778</b>	<b>\$26,384,590</b>	<b>\$26,513,517</b>

### *Capital Improvement Plan*

**Table 2-15** shows the City's inflated five-year CIP by project type. The CIP is projected for future years using the capital inflationary factor in **Table 2-6**.

**Table 2-15: Inflated Water Capital Projects**

Capital Projects	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Maintenance</b>					
2 WTP Major Maint Project	\$1,318,400	\$588,438	\$109,273	\$112,551	\$115,927
3 Misc Canal Projects	\$242,050	\$21,218	\$21,855	\$56,275	\$23,185
<b>4 Subtotal</b>	<b>\$1,560,450</b>	<b>\$609,656</b>	<b>\$131,127</b>	<b>\$168,826</b>	<b>\$139,113</b>
<b>5 Studies</b>					
6 WTP Upgrades	\$206,000	\$212,180	\$0	\$337,653	\$0
7 Automatic Meter Reading	\$0	\$53,045	\$163,909	\$0	\$0
8 Park Hill Generator	\$407,303	\$0	\$0	\$0	\$0
9 WTP SCADA Upgrades	\$0	\$0	\$0	\$337,653	\$2,318,548
10 Project 176 Relicensing	\$0	\$53,045	\$0	\$0	\$0
<b>11 Subtotal</b>	<b>\$613,303</b>	<b>\$318,270</b>	<b>\$163,909</b>	<b>\$675,305</b>	<b>\$2,318,548</b>
<b>12 In Construction</b>					
13 Bear Valley Waterline Repl (Co.)	\$204,677	\$0	\$0	\$0	\$0
14 WTP Onsite Chlorine Generation	\$5,047,000	\$97,808	\$0	\$0	\$0
15 Vista Verde Reservoir	\$6,180,000	\$5,304,500	\$562,884	\$0	\$0
16 WL-Cemetery Area	\$6,180,000	\$104,675	\$0	\$0	\$0
<b>17 Subtotal</b>	<b>\$17,611,677</b>	<b>\$5,506,982</b>	<b>\$562,884</b>	<b>\$0</b>	<b>\$0</b>
<b>18 In Design</b>					
19 A-3 Reservoir	\$30,900	\$636,540	\$4,370,908	\$225,102	\$4,637,096
20 Emergency Treated Water Connection	\$51,500	\$265,225	\$3,278,181	\$60,301	\$0
21 Lindley Reservoir Replacement	\$1,369,900	\$9,239,521	\$7,128	\$0	\$0
22 Lake Wohlford Dam Project	\$1,030,000	\$6,365,400	\$16,390,905	\$16,882,632	\$13,958,783
23 A-11 Reservoir	\$768,835	\$318,270	\$0	\$0	\$0
24 San Pasqual Undergrounding	\$412,000	\$1,060,900	\$5,463,635	\$5,627,544	\$5,796,370
<b>25 Subtotal</b>	<b>\$3,663,135</b>	<b>\$17,885,856</b>	<b>\$29,510,757</b>	<b>\$22,795,579</b>	<b>\$24,392,250</b>
<b>26 Pending</b>					
27 Distribution Staff Move	\$0	\$0	\$218,545	\$0	\$0
28 Water Pipeline Replacement	\$412,000	\$2,917,475	\$3,004,999	\$3,095,149	\$3,188,004
29 Rincon PwrP Mods/Penstck Repl (bond\$)	\$0	\$0	\$0	\$0	\$0
<b>30 Subtotal</b>	<b>\$412,000</b>	<b>\$2,917,475</b>	<b>\$3,223,545</b>	<b>\$3,095,149</b>	<b>\$3,188,004</b>
<b>31 New</b>					
32 WTP Clearwell Upgrades	\$0	\$0	\$0	\$0	\$0
33 WTP Sed Basin Effluent Channel	\$0	\$0	\$0	\$0	\$0
<b>34 Subtotal</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>35 Total</b>	<b>\$23,860,566</b>	<b>\$27,238,239</b>	<b>\$33,592,222</b>	<b>\$26,734,860</b>	<b>\$30,037,915</b>

Table 2-16 shows the capital financing plan for the Study period by funding source. Grant funding is available for the Lake Wohlford Dam Project for 50 percent of the annual cost, up to \$14.9 million. Debt funding consists of the proposed bond issues, described in the next section. Rate funding consists of all capital project costs that are not funded through grants or new debt.



**Table 2-16: Water Capital Financing Plan**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Total CIP	\$23,860,566	\$27,238,239	\$33,592,222	\$26,734,860	\$30,037,915
2 Debt Proceeds	\$25,000,000	\$0	\$30,000,000	\$0	\$20,000,000
3 Debt Proceeds Balance	\$25,000,000	\$1,654,434	\$30,000,000	\$4,603,230	\$20,000,000
4 Rate Funded CIP	\$0	\$22,401,105	\$0	\$21,387,616	\$10,037,915
5 Grant Funded CIP	\$515,000	\$3,182,700	\$8,195,453	\$744,014	\$0
6 Debt Funded CIP	\$23,345,566	\$1,654,434	\$25,396,770	\$4,603,230	\$20,000,000
7 <b>Total</b>	<b>\$23,860,566</b>	<b>\$27,238,239</b>	<b>\$33,592,222</b>	<b>\$26,734,860</b>	<b>\$30,037,915</b>

### *Existing and Proposed Debt Service*

The City has five existing debt issues and has an annual debt service of approximately \$4 million. RFC proposes that the City issue \$75 million in bonds over the Study period: \$25 million in FY 2017, \$30 million in FY 2019, and \$20 million in FY 2021. The terms for the new debt are 4 percent interest for 30 years with a 0 percent issuance cost. The City is not expected to receive any SRF loans during the five-year period. The existing and proposed debt service is detailed in **Table 2-17**.

**Table 2-17: Water Existing and Proposed Debt Service**

Debt Service	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Existing Debt	\$4,010,458	\$4,010,758	\$4,009,258	\$4,010,858	\$4,005,558
2 Proposed Bond Issue	\$1,359,283	\$1,359,283	\$2,990,423	\$2,990,423	\$4,077,850
3 Proposed SRF Loan	\$0	\$0	\$0	\$0	\$0
4 <b>Total</b>	<b>\$5,369,741</b>	<b>\$5,370,041</b>	<b>\$6,999,681</b>	<b>\$7,001,281</b>	<b>\$8,083,408</b>

### *Proposed Revenue Adjustment*

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and reserves balances. The revenue adjustments occur in March of each year. The proposed revenue adjustments and debt issue would enable the City to execute the CIP shown in **Table 2-15**.

**Table 2-18** shows the proposed revenue adjustments approved by City staff. The revenue adjustments are smoothed to avoid rate spikes. Although the following table shows anticipated revenue adjustments for the years following FY 2017, the City will review and confirm the needed revenue adjustments on an annual basis.

**Table 2-18: Proposed Water Revenue Adjustments**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue Adjustments	5.5%	5.5%	5.5%	5.5%	5.5%
Effective Month	March	March	March	March	March

### Proposed Financial Plan

The final part of the financial plan is the schedule of cash flow and is shown in **Table 2-19** over the next five fiscal years, including the additional revenue from the proposed revenue adjustments and the net annual cash flow of the City.

**Table 2-19: Proposed Water Cash Flow**

			FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Revenue from Existing Rates		\$50,226,430	\$51,273,809	\$52,430,200	\$53,621,283	\$53,621,283
2	Revenue Adjustments	% Adj. Effective Month					
3	FY 2017	5.5% March	\$920,818	\$2,820,059	\$2,883,661	\$2,949,171	\$2,949,171
4	FY 2018	5.5% March		\$991,721	\$3,042,262	\$3,111,375	\$3,111,375
5	FY 2019	5.5% March			\$1,069,862	\$3,282,501	\$3,282,501
6	FY 2020	5.5% March				\$1,154,346	\$3,463,038
7	FY 2021	5.5% March					\$1,217,835
8	<b>Subtotal</b>		<b>\$920,818</b>	<b>\$3,811,780</b>	<b>\$6,995,786</b>	<b>\$10,497,392</b>	<b>\$14,023,919</b>
9	Total Revenues from Rates		\$51,147,247	\$55,085,589	\$59,425,986	\$64,118,676	\$67,645,203
10	Other Operating Revenue		\$4,391,800	\$3,937,990	\$3,977,370	\$4,017,144	\$4,057,315
11	Interest Income		\$406,005	\$341,484	\$283,488	\$249,662	\$186,751
12	<b>Total Revenues</b>		<b>\$55,945,053</b>	<b>\$59,365,063</b>	<b>\$63,686,844</b>	<b>\$68,385,482</b>	<b>\$71,889,269</b>
13	O&M Expenses						
14	Water - Department 410		\$44,860,566	\$47,768,388	\$49,360,758	\$51,022,700	\$52,007,521
15	Canal - Department 412		\$888,490	\$919,483	\$951,625	\$984,959	\$1,019,506
16	Lakes - Department 414		\$2,791,865	\$2,888,619	\$2,989,026	\$3,093,242	\$3,198,959
17	Potable Reuse O&M		\$0	\$20,688	\$39,611	\$40,800	\$42,024
18	Rate Funded CIP, net of grants		\$0	\$22,401,105	\$0	\$21,387,616	\$10,037,915
19	<b>Total Expenses</b>		<b>\$48,540,921</b>	<b>\$73,998,284</b>	<b>\$53,341,020</b>	<b>\$76,529,317</b>	<b>\$66,305,925</b>
20	Debt Service						
21	Existing Debt Service		\$4,010,458	\$4,010,758	\$4,009,258	\$4,010,858	\$4,005,558
22	Proposed Debt Service		\$1,359,283	\$1,359,283	\$2,990,423	\$2,990,423	\$4,077,850
23	<b>Total Debt Service</b>		<b>\$5,369,741</b>	<b>\$5,370,041</b>	<b>\$6,999,681</b>	<b>\$7,001,281</b>	<b>\$8,083,408</b>
24	<b>Net Cash Flow</b>		<b>\$2,034,391</b>	<b>(\$20,003,262)</b>	<b>\$3,346,142</b>	<b>(\$15,145,117)</b>	<b>(\$2,500,064)</b>
25	Debt Service Coverage		169%	158%	187%	232%	235%
26	Required Coverage		125%	125%	125%	125%	125%

## 2.4 LEGAL FRAMEWORK AND RATE SETTING METHODOLOGY

### Legal Framework<sup>1</sup>

This section of the report describes the legal framework that was considered to ensure that the calculated cost of service rates provide a fair and equitable allocation of costs to customer classes.

<sup>1</sup> RFC does not practice law nor does it provide legal advice. The above discussion is to provide a general review of apparent state institutional constraints and is labeled “legal framework” for literary convenience only. The City should consult with its counsel for clarification and/or specific review of any of the above or other matters.

### **California Constitution - Article XIII D, Section 6 (Proposition 218)**

Proposition 218, reflected in the California Constitution as Article XIII D, was enacted in 1996 to ensure that rates and fees are reasonable and proportional to the cost of providing service. The principal requirements for fairness of the fees, as they relate to public water service are as follows:

1. A property-related charge (such as water rates) imposed by a public agency on a parcel shall not exceed the costs required to provide the property related service.
2. Revenues derived by the charge shall not be used for any other purpose other than that for which the charge was imposed.
3. The amount of the charge imposed upon any parcel shall not exceed the proportional cost of service attributable to the parcel.
4. No charge may be imposed for a service unless that service is actually used or immediately available to the owner of property.
5. No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners.
6. A written notice of the proposed charge shall be mailed to the record owner of each parcel at least 45 days prior to the public hearing, when the agency considers all written protests against the charge.

As stated in AWWA's M1 Manual, "water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." Proposition 218 requires that water rates cannot be "arbitrary and capricious," meaning that the rate-setting methodology must be sound and that there must be a nexus between costs and the rates charged. RFC followed industry standard rate setting methodologies set forth by the AWWA M1 Manual to ensure this study meets Proposition 218 requirements and creates rates that do not exceed the proportionate cost of providing water services.

"Inclining" block rate structures (which are synonymous with "increasing" block rate structures and tiered rates) when properly designed and differentiated by customer class, allow a water utility to send consistent conservation price incentives to customers. Due to heightened interest in water conservation, tiered rates have gained widespread use, especially in relatively water-scarce regions, such as Southern California. Tiered rates meet the requirements of Proposition 218 as long as the tiered rates reflect the proportionate cost of providing service.

### ***Cost-Based Rate Setting Methodology***

As stated in the AWWA M1 Manual, "the costs of water rates and charges should be recovered from classes of customers in proportion to the cost of serving those customers." To develop utility rates that comply with Proposition 218 and industry standards while meeting other emerging goals and objectives of the utility, there are four major steps discussed below.

### **1) Calculate Revenue Requirement**

The rate-making process starts by determining the revenue requirement for the test year - which for this study is FY 2017. The revenue requirement should sufficiently fund the utility's O&M, debt service, and capital expenses, and reserve funding.

### **2) Cost of Service (COS) Analysis**

The annual revenue requirement is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalizing revenue requirements. Examples of functions are supply, treatment, transmission, distribution, storage, meter servicing and customer billing and collection.
2. Allocating functionalized revenue requirements to cost causation components. Cost causation components include base, maximum day, maximum hour<sup>2</sup>, meter service, customer servicing and conservation costs.
3. Distributing the cost causation components. Distribute cost causation components, using unit costs, to customer classes in proportion to their demands on the water system. This is described in the M1 Manual published by AWWA.

A COS analysis considers both the average quantity of water consumed (base costs) and the peak rate at which it is consumed (peaking or capacity costs as identified by maximum day and maximum hour demands)<sup>3</sup>. The water system has to be designed to meet peak demands. There are additional costs associated with designing, constructing, and operating and maintaining facilities to meet peak demands. These peak demand costs need to be allocated to those imposing such costs on the utility. Different customer classes impose different peak demands on the water system. In other words, not all customer classes share the same responsibility for peaking related costs.

### **3) Rate Design and Calculations**

Rates do more than simply recover costs. Within the legal framework and industry standards, properly designed rates should support and optimize a blend of various utility objectives, such as conservation, affordability for essential needs and revenue stability among other objectives. Rates may also act as a public information tool in communicating these objectives to customers.

### **4) Rate Adoption**

Rate adoption is the last step of the rate-making process to comply with Proposition 218. RFC documented the rate study results in this Study Report to help educate the public about the proposed changes, the rationale and justifications behind the changes and their anticipated financial impacts in lay terms.

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<sup>2</sup> Collectively, maximum day and maximum hour costs are known as peaking costs or capacity costs.

<sup>3</sup> System capacity is the system's ability to supply water to all delivery points at the time when demanded. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital asset related costs incurred to accommodate the peak flows are generally allocated to each customer class based upon the class's contribution to the peak month, day and hour event.

## 2.5 COST OF SERVICE ANALYSIS

The purpose of a COS analysis is to distribute a utility's revenue requirements (i.e., costs) to each customer class. After determining a utility's revenue requirement, the next step in a COS analysis is to allocate its costs to the following functions:

- » Water supply – represents the cost of pumping groundwater and purchasing water
- » Treatment – represents the cost of treating the water
- » Transmission – represents the operating and maintenance cost of the water transmission system
- » Distribution and storage – represents the operating and maintenance cost of the water distribution system
- » Meter service – represents the cost of purchasing and maintaining water meters
- » Customer billing and collection – represents the costs associated with billing and customer service
- » General and administrative costs – represents all other costs that cannot be readily functionalized

### *Allocation of Functionalized Expenses to Cost Components*

The functionalization of costs allows for better allocation of the functionalized costs to the cost causation components, which include:

- » Supply costs – costs that are associated with pumping groundwater and purchasing water
- » Base delivery costs – costs that are associated with providing service under average conditions
- » Treatment costs – costs that are associated with water treatment
- » Peaking costs (maximum day and maximum hour) – costs that are associated with meeting the peak demand in excess of the average rate of use
- » Meter service – costs that are associated with maintenance and capital costs of meters and services
- » Customer billing and collection – costs that are incurred to provide billing and customer service
- » General and administrative costs – costs that do not have any direct cost causation
- » Revenue offsets – miscellaneous revenues to offset the costs of providing service

Peaking costs are further divided into maximum day and maximum hour demand. The maximum day demand is the maximum amount of water used in a single day in a year. The maximum hour demand is the maximum usage in an hour on the maximum usage day. Different facilities, such as distribution and storage facilities, and the O&M costs associated with those facilities are designed to meet the peaking demands of customers. Therefore, extra capacity<sup>4</sup> costs include the O&M and capital costs associated with meeting peak customer demand. This method is consistent with the AWWA M1 Manual and is widely used in the water industry to perform COS analyses.

To allocate the functionalized expenses to cost causation components, we must identify the system-wide peaking factors which are shown in **Table 2-20**. The system-wide peaking factors are used to derive the cost component allocation bases (percentages). Functionalized expenses are allocated to the cost causation

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<sup>4</sup> The terms extra capacity, peaking, and capacity costs are used interchangeably.

components using these allocation bases. To understand the interpretation of the percentages, we must first establish the base use as the average daily demand during the year.

To determine the relative proportion of costs to assign to Supply, Base Delivery, Maximum Day, and Maximum Hour, allocations are calculated based on these factors. Cost components that are solely related to providing average day demand (ADD) are allocated entirely to Base Delivery.

Cost components that are designed to meet Maximum Day peaks, such as reservoirs and transmission facilities, are allocated to Base Delivery and Maximum Day factors. The system Maximum Day and Maximum Hour factors provided by the City are 1.88 and 2.82, respectively. The Maximum Day allocation is as follows:

- » Base Delivery:  $53.2\% = (1.00/1.88)$
- » Maximum Day:  $46.8\% = (1.88-1.00)/1.88$

Cost components such as those related to the distribution system that are designed for Maximum Hour peaks are allocated similarly. The allocation of Maximum Hour facilities is as follows:

- » Base Delivery:  $35.5\% = (1.00/2.82)$
- » Maximum Day:  $31.2\% = (1.88-1.00)/2.82$
- » Maximum Hour:  $33.3\% = (2.82 - 1.88)/2.82$

Collectively the Maximum Day and Maximum Hour cost components are known as peaking costs. These allocation bases are used to assign the functionalized costs to the cost causation components.

**Table 2-20: System-Wide Peaking Factors and Allocation to Cost Causation Components**

General Peaking Factors		Percentage Allocation		
		Base	Max Day	Max Hour
Average Demand	1.00	100.0%		
Max Day Demand	1.88	53.2%	46.8%	
Max Hour Demand	2.82	35.5%	31.2%	33.3%

**Table 2-21** shows the derivation of the peaking factors by customer class and tier by dividing the total maximum monthly usage by the average monthly usage for each customer class and tier. These peaking factors are used to allocate the peaking costs to each customer class and tier in the rate derivation section. Since peak daily and hourly data for each customer class is not available, we use the maximum month usage as a proxy to estimate the maximum day characteristics of each customer class and tier. Note that the relative peaking is important not the absolute values. The monthly peaking is a reasonably good proxy for maximum day peaking. The hourly peaking factors are calculated by taking the ratio of the system peaking factors ( $2.82/1.88$ ) and applying them to the maximum day peaking factor for the different classes.

**Table 2-21: Water Peaking Factors by Customer Class**

Customer Specific Peaking Factor:	Max Month (kgal)	Average Month (kgal)	Max Day	Max Hour
Single Family Residential	330,698	233,463	<b>1.42</b>	<b>2.12</b>
Tier 1	135,789	124,863	1.09	1.63
Tier 2	95,442	61,598	1.55	2.32
Tier 3	99,467	47,002	2.12	3.17
Residential/Agricultural	3,135	2,061	<b>1.52</b>	<b>2.28</b>
Tier 1	410	401	1.02	1.53
Tier 2	2,729	1,660	1.64	2.47
Multi-Family Residential	131,086	106,580	<b>1.23</b>	<b>1.84</b>
Tier 1	78,506	74,530	1.05	1.58
Tier 2	18,418	13,283	1.39	2.08
Tier 3	34,162	18,767	1.82	2.73
Commercial/Industrial/School	101,525	79,362	<b>1.28</b>	<b>1.92</b>
Irrigation/Institutional	66,718	44,728	<b>1.49</b>	<b>2.24</b>
Landscape Districts	3,438	1,301	<b>2.64</b>	<b>3.96</b>
Special Unfiltered	34,483	21,462	<b>1.61</b>	<b>2.41</b>
Agricultural Use	124,143	85,565	<b>1.45</b>	<b>2.18</b>

To allocate meter related costs appropriately, the concept of equivalent meters needs to be understood. By using equivalent meters instead of a straight meter count, the analysis accounts for the fact that larger meters impose larger demands, are more expensive to install, maintain, and replace than smaller meters and commit a greater capacity in the system. Equivalent meters are used in calculating meter service costs.

Equivalent meters are based on meter hydraulic capacity. Equivalent meters are calculated to represent the potential demand on the water system compared to the base or smallest meter size. A ratio of hydraulic capacity is calculated by dividing large meter capacities by the base meter capacity. The base meter is the smallest meter, which is the 5/8-inch and 3/4-inch meter for the purposes of this Study. The actual number of meters by size is multiplied by the corresponding capacity ratio to calculate equivalent meters. The capacity ratio is calculated using the meter capacity in gallons per minute (gpm) provided in the AWWA M22 Manual. **Table 2-22** shows the equivalent meters for FY 2017.

**Table 2-22: Water Equivalent Meters (FY 2017)**

Meter Size	Actual Meters	AWWA Ratio	Equivalent Meters
5/8" and 3/4"	21,875	1.00	21,875
1"	2,428	1.67	4,055
1 1/2"	935	3.33	3,114
2"	867	5.33	4,621
3"	51	11.67	595
4"	30	21.00	630
6"	5	46.67	233
8"	3	80.00	240
3/4" x 3"	11	11.67	128
1" x 4"	11	21.00	231
1 1/2" x 6"	0	46.67	0
3/4" x 3" x 6"	0	46.67	0
1" x 4" x 8"	1	80.00	80
2" x 6"	8	46.67	373
2" x 8"	0	80.00	0
<b>Total</b>	<b>26,225</b>		<b>36,176</b>

**Table 2-23** allocates the O&M expenses to each cost causation component (details are shown in Appendix B). The functional costs, which are represented by each expense line item of the City's budget, are allocated according to industry standards based on the nature of the water function. For example, water supply and production costs are allocated fully to the Supply component. Treatment costs are allocated to the Treatment component. Distribution costs are allocated on the basis of Maximum Hour. Utility billing costs are allocated fully to the Customer component. Some costs which cannot be readily classified into one of the functions are allocated to General, and then allocated amongst the other cost causation components proportionate to the overall cost allocation. **Table 2-24** shows the total resulting cost causation component allocation for the City's O&M expenses. This resulting allocation is used to allocate the City's operating revenue requirement to the cost causation components.

**Table 2-25** shows the allocation of the City's assets to each cost component. The resulting total asset allocation is derived in a similar manner as the O&M expenses allocation. First, RFC functionalized the City's assets and then allocated the assets to the cost causation components resulting in the total asset allocation shown in **Table 2-26**.

**Table 2-23** through **Table 2-30** are reproduced in Appendix A for better legibility.



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**Table 2-23: Water O&M Expenses Percentage Allocation**

Departments	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
<b>Water - Dept. 410</b>									
Employee Services	15.2%	13.4%	14.3%	0.0%	27.5%	0.0%	7.6%	21.9%	100%
Maintenance & Operations	16.8%	3.6%	0.3%	56.5%	8.7%	0.1%	0.5%	13.5%	100%
Capital Outlay	50.4%	44.4%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Internal Service	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	99.6%	100%
Allocations	0.3%	0.3%	0.2%	0.0%	0.2%	0.0%	0.0%	99.0%	100%
<b>Canal - Dept. 412</b>									
Employee Services								100%	100%
Maintenance & Operations								100%	100%
Capital Outlay								100%	100%
Internal Service								100%	100%
Allocations								100%	100%
<b>Lakes - Dept. 414</b>									
Employee Services								100%	100%
Maintenance & Operations								100%	100%
Capital Outlay								100%	100%
Internal Service								100%	100%
Allocations								100%	100%

**Table 2-24: Total Water O&M Expenses Allocation by Cost Causation Component**

Departments	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
<b>Water - Dept. 410</b>									
Employee Services	\$1,179,018	\$1,037,907	\$1,108,462	\$0	\$2,128,061	\$0	\$588,288	\$1,697,014	\$7,738,750
Maintenance & Operations	\$5,156,374	\$1,120,251	\$91,510	\$17,379,550	\$2,672,682	\$25,249	\$166,959	\$4,169,810	\$30,782,385
Capital Outlay	\$518,401	\$456,356	\$54,063	\$0	\$0	\$0	\$0	\$0	\$1,028,820
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$5,735	\$1,272,195	\$1,277,930
Allocations	\$19,239	\$16,936	\$13,481	\$0	\$13,266	\$85	\$385	\$6,181,722	\$6,245,115
<b>Canal - Dept. 412</b>									
Employee Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$536,640	\$536,640
Maintenance & Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$182,740	\$182,740
Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,000	\$24,000
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$126,945	\$126,945
Allocations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,165	\$18,165
<b>Lakes - Dept. 414</b>									
Employee Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,783,505	\$1,783,505
Maintenance & Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$561,800	\$561,800
Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,000	\$24,000
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$418,780	\$418,780
Allocations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,780	\$3,780
<b>Total O&amp;M Expenses</b>	<b>\$6,873,032</b>	<b>\$2,631,451</b>	<b>\$1,267,516</b>	<b>\$17,379,550</b>	<b>\$4,814,009</b>	<b>\$25,334</b>	<b>\$761,367</b>	<b>\$17,001,096</b>	<b>\$50,753,355</b>
Percent Allocation	14%	5%	2%	34%	9%	0%	2%	33%	100%

**Table 2-25: Water Capital Assets Percentage Allocation**

Asset Categories	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
Plant					100%				100%
Dams, Reservoirs, Lakes	53%	47%							100%
Pump Stations	53%	47%							100%
Water Pipeline	35%	31%	33%						100%
Infrastructure Pipelines	35%	31%	33%						100%
Land	43%	37%						20%	100%
Equipment						10%	45%	45%	100%
Other								100%	100%
Canal								100%	100%
Power Plants								100%	100%

**Table 2-26: Total Water Capital Assets Allocation by Cost Causation Component**

Asset Categories	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
Plant	\$0	\$0	\$0	\$0	\$48,751,826	\$0	\$0	\$0	\$48,751,826
Dams, Reservoirs, Lakes	\$16,720,627	\$14,719,419	\$0	\$0	\$0	\$0	\$0	\$0	\$31,440,046
Pump Stations	\$509,461	\$448,487	\$0	\$0	\$0	\$0	\$0	\$0	\$957,948
Water Pipeline	\$42,601,698	\$37,502,914	\$40,052,306	\$0	\$0	\$0	\$0	\$0	\$120,156,918
Infrastructure Pipelines	\$10,091,915	\$8,884,065	\$9,487,990	\$0	\$0	\$0	\$0	\$0	\$28,463,970
Land	\$776,065	\$683,182	\$0	\$0	\$0	\$0	\$0	\$364,812	\$1,824,059
Equipment	\$0	\$0	\$0	\$0	\$0	\$314,096	\$1,413,431	\$1,413,431	\$3,140,957
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,604,686	\$2,604,686
Canal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$622,846	\$622,846
Power Plants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,090,628	\$19,090,628
<b>Total Assets</b>	<b>\$70,699,766</b>	<b>\$62,238,066</b>	<b>\$49,540,296</b>	<b>\$0</b>	<b>\$48,751,826</b>	<b>\$314,096</b>	<b>\$1,413,431</b>	<b>\$24,096,402</b>	<b>\$257,053,883</b>
Percent Allocation	28%	24%	19%	0%	19%	0%	1%	9%	100%

### *Revenue Requirements Determination*

Table 2-27 shows the revenue requirement derivation with the total revenue required from rates. The totals shown in the “Operating” and “Capital” columns are the total O&M and capital revenue requirements, respectively, that are allocated to the cost causation components using the allocation percentages shown in Table 2-24 and Table 2-26.

RFC calculated the revenue requirement using FY 2017 expenses, which include O&M expenses, rate funded capital expenses, and existing and proposed debt service. To arrive at the rate revenue requirement, we subtract revenue offsets from other expenses and make adjustments for annual cash balances. The negative adjustments are subtracted and therefore added as a result of subtracting a negative number. The total revenue requirement is the amount that fixed meter charges and commodity rates are designed to collect.

**Table 2-27: Water Revenue Requirement Determination**

	Operating	FY 2017 Capital	Total
<b>1 Revenue Requirements</b>			
2 Water O&M Expenses	\$44,860,566		\$44,860,566
3 Canal O&M Expenses	\$888,490		\$888,490
4 Lakes O&M Expenses	\$2,791,865		\$2,791,865
5 Recycled Water Expenses	\$0		\$0
6 Existing Debt Service		\$4,010,458	\$4,010,458
7 Proposed Debt Service		\$1,359,283	\$1,359,283
8 Rate Funded Capital Projects		\$0	\$0
<b>9 Subtotal</b>	<b>\$48,540,921</b>	<b>\$5,369,741</b>	<b>\$53,910,662</b>
<b>10 Revenue Offsets</b>			
11 Federal Grants		\$500,000	\$500,000
12 Concessions - Lake Dixon	\$85,000		\$85,000
13 Fishing - Lake Dixon	\$230,000		\$230,000
14 Camping - Lake Dixon	\$155,000		\$155,000
15 Entry Fees - Lake Dixon	\$115,000		\$115,000
16 Boat Rentals - Lake Dixon	\$185,000		\$185,000
17 State Fishing Licenses	\$9,000		\$9,000
18 Fishing - Lake Wohlford	\$80,000		\$80,000
19 Boat Rentals - Lake Wohlford	\$30,000		\$30,000
20 Reimb from Outside Agencies	\$0		\$0
21 Meter Installation	\$50,000		\$50,000
22 Penalties (Late Fee)	\$1,000,000		\$1,000,000
23 Water Connection Fees		\$375,000	\$375,000
24 VID Rincon Filtration Charge	\$1,300,000		\$1,300,000
25 Water Line Develop Reimb	\$0		\$0
26 VID - Canal Reimbursement	\$100,000		\$100,000
27 Electrical Energy	\$75,000		\$75,000
28 Electrical Energy - Indian Aff	\$0		\$0
29 Temporary Meter Installations	\$0		\$0
30 CIP Reimbursement		\$0	\$0
31 Pension Expense-GASB 68	\$0		\$0
32 Other Interest-Non Investment	\$0		\$0
33 Contributions	\$0		\$0
34 Developer Contributions	\$0		\$0
35 Interest-Trustee	\$0		\$0
36 Investment Earnings	\$130,400		\$130,400
37 Rent	\$80,000		\$80,000
38 Bank Acct Analysis Fees-Contra	\$0		\$0
39 Cr. Card Merchant Fees-Contra	\$0		\$0
40 Cr Card Clearing-Dixon Lake	\$0		\$0
41 Damages - City Property	\$0		\$0
42 Misc Over / Short	\$0		\$0
43 Bad Debt Recoveries	\$0		\$0
44 Invest-Unrealized Gain or Loss	\$0		\$0
45 Gain/Loss Disp of Fixed Assets	\$0		\$0
46 Bad Debt Offset - Contra Acct	\$0		\$0
47 Prior Period Exp/Rev	\$0		\$0
48 Other Revenue	\$30,000		\$30,000
49 Clearing Account	\$0		\$0
50 Transfers In	\$0		\$0
51 Transfers Out	(\$7,200)		(\$7,200)
<b>52 Subtotal</b>	<b>\$3,647,200</b>	<b>\$875,000</b>	<b>\$4,522,200</b>
<b>53 Adjustments</b>			
54 Adjustments to Annualize Rate Increase	(\$1,841,636)		(\$1,841,636)
55 Adjustments for Annual Cash Balance	\$0	(\$2,034,391)	(\$2,034,391)
<b>56 Subtotal</b>	<b>(\$1,841,636)</b>	<b>(\$2,034,391)</b>	<b>(\$3,876,026)</b>
<b>57 Revenue to be Recovered from Rates</b>	<b>\$46,735,357</b>	<b>\$6,529,132</b>	<b>\$53,264,489</b>

### Unit Cost Component Derivation

Our end goal is to proportionately distribute the cost causation components to each customer class. To do so, we must calculate the cost causation component unit costs, which begins by assessing the total units of service demanded by each class for each cost causation component. In order to determine the units of service demanded by each customer class, the peaking factors in **Table 2-21** and the equivalent meters in **Table 2-22** are utilized along with the number of bills, which is calculated by multiplying the number of accounts by the number of monthly bills. The process is summarized in **Table 2-28**.

**Table 2-28: Derivation of Water Cost Causation Component Units of Service**

Customer Class	Annual Usage (kgal)	Daily Usage (kgal/day)	Capacity Factor	Max Day Capacity (kgal/day)	Capacity (kgal/day)	Capacity Factor	Max Hour Capacity (kgal/day)	Capacity (kgal/day)	Equivalent Meters	Number of Bills
1 Single Family Residential	<b>2,580,950</b>									
2 Tier 1	1,380,373	3,782	1.09	4,113	331	1.63	6,169	2,387		
3 Tier 2	680,969	1,866	1.55	2,891	1,025	2.32	4,336	2,470		
4 Tier 3	519,609	1,424	2.12	3,013	1,589	3.17	4,519	3,095		
5 Residential/Agricultural	<b>25,284</b>									
6 Tier 1	4,924	13	1.02	14	0	1.53	21	7		
7 Tier 2	20,361	56	1.64	92	36	2.47	138	82		
8 Multi-Family Residential	<b>1,255,438</b>									
9 Tier 1	877,748	2,405	1.05	2,533	128	1.58	3,800	1,395		
10 Tier 2	156,552	429	1.39	595	166	2.08	892	463		
11 Tier 3	221,138	606	1.82	1,103	497	2.73	1,654	1,048		
12 Commercial/Industrial/School	772,338	2,116	1.28	2,707	591	1.92	4,060	1,944		
13 Irrigation/Institutional	383,790	1,051	1.49	1,568	517	2.24	2,353	1,301		
14 Landscape Districts	14,898	41	2.64	108	67	3.96	162	121		
15 SD Zoo Safari Park	135,860	372	1.61	598	226	2.41	897	525		
16 Special Unfiltered	243,522	667	1.61	1,072	405	2.41	1,608	941		
17 Agricultural Use	925,622	2,536	1.45	3,679	1,143	2.18	5,519	2,983		
18 <b>Total</b>	<b>6,337,703</b>	<b>17,364</b>		<b>24,085</b>	<b>6,721</b>		<b>36,127</b>	<b>18,764</b>	<b>36,176</b>	<b>314,700</b>

Similar to the O&M expenses and capital assets percentage allocation, the revenue offsets must be allocated to each cost causation component, as shown in **Table 2-29**.

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**Table 2-29: Water Revenue Offsets Percentage Allocation**

Revenue Offset Allocation	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offsets	Total
Federal Grants	28%	24%	19%	0%	19%	0%	1%	9%		100%
Concessions - Lake Dixon									100%	100%
Fishing - Lake Dixon									100%	100%
Camping - Lake Dixon									100%	100%
Entry Fees - Lake Dixon									100%	100%
Boat Rentals - Lake Dixon									100%	100%
State Fishing Licenses									100%	100%
Fishing - Lake Wohlford									100%	100%
Boat Rentals - Lake Wohlford									100%	100%
Reimb from Outside Agencies	14%	5%	2%	34%	9%		2%	33%		100%
Meter Installation						100%				100%
Penalties (Late Fee)									100%	100%
Water Connection Fees	28%	24%	19%	0%	19%	0%	1%	9%		100%
VID Rincon Filtration Charge	14%	5%	2%	34%	9%	0%	2%	33%		100%
Water Line Develop Reimb	28%	24%	19%	0%	19%	0%	1%	9%		100%
VID - Canal Reimbursement	28%	24%	19%	0%	19%	0%	1%	9%		100%
Electrical Energy	100%									100%
Electrical Energy - Indian Aff	100%									100%
Temporary Meter Installations						100%				100%
CIP Reimbursement	28%	24%	19%	0%	19%	0%	1%	9%		100%
Pension Expense-GASB 68								100%		100%
Other Interest-Non Investment									100%	100%
Contributions									100%	100%
Developer Contributions	28%	24%	19%	0%	19%	0%	1%	9%		100%
Interest-Trustee									100%	100%
Investment Earnings									100%	100%
Rent									100%	100%
Bank Acct Analysis Fees-Contra							100%			100%
Cr. Card Merchant Fees-Contra							100%			100%
Cr Card Clearing-Dixon Lake							100%			100%
Damages - City Property									100%	100%
Misc Over / Short									100%	100%
Bad Debt Recoveries									100%	100%
Invest-Unrealized Gain or Loss									100%	100%
Gain/Loss Disp of Fixed Assets	28%	24%	19%	0%	19%	0%	1%	9%		100%
Bad Debt Offset - Contra Acct									100%	100%
Prior Period Exp/Rev									100%	100%
Other Revenue									100%	100%
Clearing Account									100%	100%
Transfers In								100%		100%
Transfers Out								100%		100%
Placeholder								100%		100%
Placeholder								100%		100%
Placeholder								100%		100%
<b>Total Revenue Offset Allocation</b>	<b>\$519,209</b>	<b>\$303,470</b>	<b>\$220,372</b>	<b>\$445,161</b>	<b>\$308,221</b>	<b>\$51,840</b>	<b>\$24,863</b>	<b>\$519,664</b>	<b>\$2,129,400</b>	<b>\$4,522,200</b>

**Table 2-30** shows the cost causation component unit cost derivation. The operating revenue requirement is allocated to the cost causation components using the O&M allocations. Similarly, the capital revenue requirement is allocated to the cost causation components using the capital asset allocations. The revenue offsets are derived from **Table 2-29**. General and administrative costs, which cannot be tied to a specific function, are redistributed in proportion to the resulting allocation of the other cost causation components, excluding Supply and Treatment.

To provide revenue stability for the City, a portion of the peaking costs are allocated to the meter component in order to collect approximately 26 percent of the City's water revenues from the fixed rate component. The fixed costs of the water enterprise exceed 50 percent and therefore it is appropriate to increase the fixed portion to be collected from rates and yet provide adequate incentive for conservation through the variable rates.

**Table 2-30: Water Unit Cost Calculation**

	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offsets	Total
1 Operating Expenses	\$6,822,818	\$2,612,226	\$1,258,256	\$17,252,577	\$4,778,839	\$25,149	\$755,804	\$16,876,888	\$0	\$50,382,557
2 Capital Expenses	\$2,036,423	\$1,792,694	\$1,426,949	\$0	\$1,404,238	\$9,047	\$40,712	\$694,068	\$0	\$7,404,132
3 Revenue Offsets	(\$519,209)	(\$303,470)	(\$220,372)	(\$445,161)	(\$308,221)	(\$51,840)	(\$24,863)	(\$519,664)	(\$2,129,400)	(\$4,522,200)
4 <b>Total Cost of Service</b>	<b>\$8,340,032</b>	<b>\$4,101,449</b>	<b>\$2,464,834</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>(\$17,644)</b>	<b>\$771,654</b>	<b>\$17,051,292</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>
5 Allocation of General Cost	\$9,080,803	\$4,465,745	\$2,683,763			(\$19,211)	\$840,193	(\$17,051,292)		\$0
6 Allocation of Base Cost	\$0					\$0				\$0
7 Allocation of Peaking Cost to Meter		(\$7,710,475)	(\$4,633,737)			\$12,344,212				\$0
8 <b>Total Adjusted Cost of Service</b>	<b>\$17,420,835</b>	<b>\$856,719</b>	<b>\$514,860</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>\$12,307,356</b>	<b>\$1,611,846</b>	<b>\$0</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>
9 Unit of Service	6,337,703	6,721	18,764	6,337,703	5,168,559	434,108	314,700		2,263,044	
10	kgal	kgal/day	kgal/day	kgal	kgal	equiv. meters/yr	bills/yr		kgal	
11 Unit Cost	\$2.75	\$127.46	\$27.44	\$2.65	\$1.14	\$28.35	\$5.12		(\$0.94)	
12	kgal	kgal/day	kgal/day	kgal	kgal	equiv. meter/mo	bills/mo		kgal	

### *Distribution of Cost Causation Components to Customer Classes*

The final step in a COS analysis is to distribute the cost causation components to the user classes using the unit costs derived in **Table 2-30** to arrive at the cost to serve each customer class. **Table 2-31** shows the derivation of the cost to serve (i.e., cost of service for) each customer class. The Supply, Treatment, Base Delivery, Maximum Day, and Maximum Hour cost components are collected through Commodity Rates (\$/hcf) for potable water. The Meter and Customer cost components are collected through the City's monthly Meter Service Charges. The proposed proportion of fixed revenue remains the same as the current proportion at approximately 26 percent and is designed to increase at 1 percent every following year in order to increase revenue stability.

To derive the cost to serve each customer class, the unit costs from **Table 2-30** are multiplied with the units of service shown in **Table 2-28** for each class. Note that the total cost of service is equal to the total revenue requirement in **Table 2-27** as intended.

**Table 2-31: Allocation of Water Costs to Customer Classes**

Customer Class	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offset	Total
1 Single Family Residential										
2 Tier 1	\$3,930,074	\$42,180	\$65,505	\$3,660,711	\$1,569,004				(\$1,298,855)	\$7,968,620
3 Tier 2	\$1,938,793	\$130,658	\$67,786	\$1,805,911	\$774,025					\$4,717,174
4 Tier 3	\$1,479,383	\$202,546	\$84,934	\$1,377,988	\$590,614					\$3,735,467
5 Residential/Agricultural										
6 Tier 1	\$14,018	\$37	\$197	\$13,057	\$5,596				(\$4,633)	\$28,273
7 Tier 2	\$57,969	\$4,579	\$2,244	\$53,996	\$23,143					\$141,931
8 Multi-Family Residential										
9 Tier 1	\$2,499,045	\$16,353	\$38,273	\$2,327,763	\$997,694				(\$825,912)	\$5,053,216
10 Tier 2	\$445,722	\$21,133	\$12,708	\$415,172	\$177,946					\$1,072,681
11 Tier 3	\$629,604	\$63,349	\$28,768	\$586,452	\$251,357					\$1,559,531
12 Commercial/Industrial/School	\$2,198,933	\$75,321	\$53,352	\$2,048,220	\$877,880					\$5,253,707
13 Irrigation/Institutional	\$1,092,694	\$65,893	\$35,703	\$1,017,802	\$436,236					\$2,648,327
14 Landscape Districts	\$42,417	\$8,549	\$3,320	\$39,510	\$16,934					\$110,731
15 SD Zoo Safari Park	\$386,807	\$28,786	\$14,402	\$360,296	\$154,425					\$944,716
16 Special Unfiltered	\$693,334	\$51,598	\$25,815	\$645,814	\$0					\$1,416,560
17 Agricultural Use	\$2,012,040	\$145,738	\$81,852	\$2,454,724	\$0					\$4,694,353
18 Meter						\$12,307,356	\$1,611,846			\$13,919,203
19 <b>Total</b>	<b>\$17,420,835</b>	<b>\$856,719</b>	<b>\$514,860</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>\$12,307,356</b>	<b>\$1,611,846</b>	<b>\$0</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>

## **2.6 RATE DESIGN**

The last step in the COS study is the rate design. In this step, we have some flexibility to design rates to meet the City's objectives such as conservation and revenue stability. Proposition 218 does not specify the

type of rate structure as long as the rates justify the cost of serving customers. RFC is proposing to retain the current rate structure including the tier breakpoints.

### *Design of Monthly Service Charges*

**Table 2-32** shows the design of the monthly service charges. The COS analysis in **Table 2-31** is used to determine the monthly service charge. The monthly service charge is designed to collect the amount of revenue shown in the “Meter” and “Customer” columns.

There are two components that comprise the fixed service charges: meter capacity and customer service (i.e., billing). This charge recognizes the fact that even when a customer does not use any water, the City incurs fixed costs in connection with the maintenance of the water system, the ability or readiness to serve each connection, and/or the billing services provided to each connection.

The meter capacity component collects capacity related costs. Capacity related costs can be allocated to and collected through the monthly service charge by meter size. This reflects the fact that larger meters have the potential to demand more capacity compared to smaller meters. The potential capacity demanded is proportional to the potential flow through each meter size as established by the AWWA hydraulic capacity ratios which are shown in the “Meter Ratio” column of **Table 2-32**. The ratios depict the potential flow through each meter size compared to the flow through a 5/8-inch and 3/4-inch meter, which is the base meter size for this Study. The meter capacity component for a 5/8-inch and 3/4-inch meter is equal to the unit cost per equivalent meter derived in the “Meter” column of **Table 2-30**. The meter capacity component for all larger meters with a meter ratio larger than 1 is scaled up using the AWWA capacity ratios shown in the “Meter Ratio” column of **Table 2-32**.

The customer/billing component recovers costs associated with meter reading, customer billing and collection, and customer service costs. These costs are the same for all meter sizes as it costs the same to provide billing and customer services to a small meter as it does for a larger meter. The customer/billing component is derived in the “Customer” column of **Table 2-32** and is equal to the Customer unit cost as calculated in **Table 2-30**.

**Table 2-32: Design of Proposed Water Monthly Service Charges in FY 2017**

Meter Size	AWWA Ratio	Meter	Customer	Proposed Monthly Charges
1 5/8" and 3/4"	1.00	\$28.35	\$5.12	\$33.48
2 1"	1.67	\$47.35	\$5.12	\$52.47
3 1 1/2"	3.33	\$94.41	\$5.12	\$99.54
4 2"	5.33	\$151.11	\$5.12	\$156.24
5 3"	11.67	\$330.86	\$5.12	\$335.98
6 4"	21.00	\$595.37	\$5.12	\$600.50
7 6"	46.67	\$1,323.14	\$5.12	\$1,328.26
8 8"	80.00	\$2,268.07	\$5.12	\$2,273.20
9 3/4" x 3"	11.67	\$330.86	\$5.12	\$335.98
10 1" x 4"	21.00	\$595.37	\$5.12	\$600.50
11 1 1/2" x 6"	46.67	\$1,323.14	\$5.12	\$1,328.26
12 3/4" x 3" x 6"	46.67	\$1,323.14	\$5.12	\$1,328.26
13 1" x 4" x 8"	80.00	\$2,268.07	\$5.12	\$2,273.20
14 2" x 6"	46.67	\$1,323.14	\$5.12	\$1,328.26
15 2" x 8"	80.00	\$2,268.07	\$5.12	\$2,273.20
<b>16 Total</b>				

The proposed monthly service charges related to the MWD RTS and CWA IAC Charges are calculated similarly to the Meter component. However, instead of utilizing the AWWA ratio to scale up the Meter component, the MWD and CWA ratios are used for each respective charge. The MWD RTS Charge is shown in **Table 2-33** and the CWA IAC Charge is shown in **Table 2-34**.



**Table 2-33: Proposed MWD RTS Charges in FY 2017**

Meter Size - MWD RTS	MWD Ratio	Meter	Customer	Proposed Monthly Charges
1 5/8" and 3/4"	1.00	\$2.46	\$0.00	\$2.46
2 1"	1.60	\$3.94	\$0.00	\$3.94
3 1 1/2"	3.00	\$7.37	\$0.00	\$7.38
4 2"	5.20	\$12.79	\$0.00	\$12.79
5 3"	9.61	\$23.60	\$0.00	\$23.61
6 4"	16.41	\$40.31	\$0.00	\$40.32
7 6"	30.01	\$73.75	\$0.00	\$73.75
8 8"	52.02	\$127.84	\$0.00	\$127.84
9 3/4" x 3"	10.30	\$25.32	\$0.00	\$25.33
10 1" x 4"	16.24	\$39.90	\$0.00	\$39.90
11 1 1/2" x 6"	32.48	\$79.80	\$0.00	\$79.81
12 3/4" x 3" x 6"	39.90	\$98.04	\$0.00	\$98.04
13 1" x 4" x 8"	63.59	\$156.26	\$0.00	\$156.27
14 2" x 6"	35.74	\$87.81	\$0.00	\$87.82
15 2" x 8"	49.61	\$121.90	\$0.00	\$121.91
<b>16 Total</b>				

**Table 2-34: Proposed CWA IAC Charges in FY 2017**

Meter Size - CWA IAC	CWA Ratio	Meter	Customer	Proposed Monthly Charges
1 5/8" and 3/4"	1.00	\$2.79	\$0.00	\$2.79
2 1"	1.60	\$4.46	\$0.00	\$4.46
3 1 1/2"	3.00	\$8.36	\$0.00	\$8.36
4 2"	5.20	\$14.49	\$0.00	\$14.49
5 3"	9.61	\$26.77	\$0.00	\$26.78
6 4"	16.41	\$45.71	\$0.00	\$45.72
7 6"	30.00	\$83.60	\$0.00	\$83.60
8 8"	51.99	\$144.85	\$0.00	\$144.86
9 3/4" x 3"	16.41	\$45.71	\$0.00	\$45.72
10 1" x 4"	25.01	\$69.67	\$0.00	\$69.68
11 1 1/2" x 6"	49.89	\$139.00	\$0.00	\$139.00
12 3/4" x 3" x 6"	49.89	\$139.00	\$0.00	\$139.00
13 1" x 4" x 8"	80.22	\$223.52	\$0.00	\$223.52
14 2" x 6"	49.89	\$139.00	\$0.00	\$139.00
15 2" x 8"	80.22	\$223.52	\$0.00	\$223.52
<b>16 Total</b>				

### *Design of Proposed Commodity Rates*

The proposed rate structure includes three tiers for Single Family Residential and Multi-Family Residential and two tiers for Residential/Agricultural customers. The current tiers are retained and defined as follows:

#### Single Family Residential

- » Tier 1 (0-7 kgal): this represents the average indoor usage for Single Family Residential customers. This allocation provides sufficient indoor water usage assuming an average residential family of 4 people per household using 55 gallons per person per day. The State standard described in SB7x7 is 55 gallons per person per day.
- » Tier 2 (7-15 kgal): this represents the average summer usage for Single Family Residential customers in FY 2015. This allocation is representative of sufficient outdoor water for an average Single Family Residential customer.
- » Tier 3 (over 15 kgal): this represents any usage that falls above the average indoor and outdoor water usage for the average Single Family Residential customer.

#### Residential/Agricultural

- » Tier 1 (0-7 kgal): this represents the average indoor usage for Residential/Agricultural customers. This allocation provides sufficient indoor water usage assuming an average residential family of 4 people per household using 55 **gallons per person per day**. Tier 2 (over 7 kgal): this represents any usage the falls above the average indoor use for the average Residential/Agricultural customer.

#### Multi-Family Residential

- » Tier 1 (0-5 kgal): this represents the average indoor usage for Multi-Family Residential customers. This allocation provides sufficient indoor water usage assuming an average residential family of 3 people per household using 55 gallons per person per day.
- » Tier 2 (5-7 kgal): this represents the average summer usage for Multi-Family Residential customers in FY 2015. This allocation is representative of sufficient outdoor water for an average Multi-Family Residential customer.
- » Tier 3 (over 7 kgal): this represents any usage that falls above the average indoor and outdoor water usage for the average Multi-Family Residential customer.

All other customer classes, including Commercial/Industrial, Irrigation/Institutional, Landscape Districts, SD Zoo Safari Park, Special Unfiltered, and Agricultural Use have a uniform rate structure.

The commodity rates for each class and tier are derived by adding the unit rates for four cost causation components: Supply, Base Delivery, Peaking (Maximum Day and Maximum Hour), and Treatment. Revenue offsets are used to help offset the costs to Tier 1 customers.

Supply costs are costs related to the cost of purchasing and producing water. The City has two sources of water: local groundwater and imported water from CWA. Based on City's policies, Agricultural customers receive priority of the local groundwater supply. Based on **Table 2-13**, all 980 AF or 319,312 kgal of local groundwater supply is allocated to Agricultural customers. Since that is not sufficient to meet their demand,

the remaining water supply comes from the TSAWR supply. All other customers use imported CWA supply. **Table 2-35** shows the calculation for the water supply cost for all customer classes and tiers.

**Table 2-35: Water Supply Cost Calculation**

Sources of Supply	Local Water	TSAWR	Imported Water	Total	
Available Supply (kgal)	319,312	925,622	5,092,769	6,337,703	
Cost from O&M	\$14,902	\$2,123,889	\$14,668,625	\$16,807,416	
<b>Unit cost (\$/kgal)</b>	<b>\$0.05</b>	<b>\$2.29</b>	<b>\$2.88</b>	<b>\$2.65</b>	
Adjusted Available Supply (kgal)	319,312	606,310	5,412,081	6,337,703	
<b>Unit cost (\$/kgal)</b>	<b>\$0.05</b>	<b>\$2.29</b>	<b>\$2.85</b>	<b>\$2.65</b>	

Customer Class	Usage (kgal)	Local Water	TSAWR	Imported Water	Total	Unit Cost
Single Family Residential	2,580,950	0		2,580,950	2,580,950	\$2.85
Tier 1	1,380,373	0		1,380,373	1,380,373	\$2.85
Tier 2	680,969	0		680,969	680,969	\$2.85
Tier 3	519,609	0		519,609	519,609	\$2.85
Residential/Agricultural	25,284	0		25,284	25,284	\$2.85
Tier 1	4,924	0		4,924	4,924	\$2.85
Tier 2	20,361	0		20,361	20,361	\$2.85
Multi-Family Residential	1,255,438	0		1,255,438	1,255,438	\$2.85
Tier 1	877,748	0		877,748	877,748	\$2.85
Tier 2	156,552	0		156,552	156,552	\$2.85
Tier 3	221,138	0		221,138	221,138	\$2.85
Commercial/Industrial/School	772,338	0		772,338	772,338	\$2.85
Irrigation/Institutional	383,790	0		383,790	383,790	\$2.85
Landscape Districts	14,898	0		14,898	14,898	\$2.85
SD Zoo Safari Park	135,860	0		135,860	135,860	\$2.85
Special Unfiltered	243,522	0		243,522	243,522	\$2.85
Agricultural Use	925,622	319,312	606,310	0	925,622	\$1.52
<b>Total</b>	<b>6,337,703</b>	<b>319,312</b>	<b>606,310</b>	<b>5,412,081</b>	<b>6,337,703</b>	<b>\$2.68</b>

Base Delivery costs are the operating and capital costs associated with delivering water to all customers at a constant average rate of use – also known as serving customers under average daily demand conditions. Therefore, Base Delivery costs are spread on total water use irrespective of customer classes or tiers. However, Agricultural customers do not pay the CWA Storage Charge and CWA Supply Reliability Charge, consistent with CWA policy for TSAWR eligible customers. **Table 2-36** shows the calculation for the Base Delivery cost for Agricultural customers (\$2.17/kgal) that excludes the CWA Storage and Supply Reliability Charges and the Base Delivery cost for all other customers (\$2.85/kgal).

**Table 2-36: Water Base Delivery Calculation**

<b>Base Delivery Calculation</b>	
Total Adjustment Cost of Service	\$17,420,835
Less: CWA Storage Charge	\$2,680,608
Less: CWA Supply Reliability Charge	\$963,852
<b>Base Delivery Cost, Less Storage Charge</b>	<b>\$13,776,375</b>
Usage (kgal)	6,337,703
<b>Unit Cost for Base Delivery less Storage &amp; Reliability (\$/kgal)</b>	<b>\$2.17</b>
Usage, less Ag (kgal)	5,412,081
<b>Unit Cost for Storage &amp; Reliability Charge (\$/kgal)</b>	<b>\$0.67</b>

Treatment costs, excluding the costs that are associated with providing for Maximum Day demand, which represent approximately 47 percent of the total treatment costs, are related to the costs of treating water for all customer classes, excluding Special Unfiltered and Agricultural Use. Therefore, Treatment costs are evenly spread on water used by all customer classes, excluding Special Unfiltered and Agricultural Use. The treatment unit cost for all customers are calculated as shown below:

Total Treatment Cost (a)	= \$5,874,856 (from Table 2-30)
Base Allocation (53%) (b)	= \$3,124,400 [ a x 53%] (from Table 2-20)
Peaking Allocation (47%) (c)	= \$2,750,456 [ a x 47%] (from Table 2-20)
Total Usage (kgal) (d)	= 5,168,559 (from Table 2-30)
Base Treatment Unit Cost (\$/kgal) (e)	= \$0.60/kgal [ c / d]

Peaking costs, or extra capacity costs, represent costs incurred to meet customer peak demands in excess of average daily demand. Total extra capacity costs are comprised of Maximum Day and Maximum Hour cost components, along with a portion of the treatment costs that are associated with providing for Maximum Day demand. The peaking unit cost is determined by dividing the total peaking cost for each customer class and tier shown in **Table 2-31** by the corresponding usage (kgal). **Table 2-37** shows the peaking unit cost for each customer class and tier.

**Table 2-37: Water Peaking Cost Calculation**

Customer Class	Monthly Tier	Peaking Costs	Treatment Peaking Cost	Usage (kgal)	Unit Cost
Single Family Residential					
Tier 1	7	\$107,686	\$175,945	1,380,373	\$0.21
Tier 2	15	\$198,445	\$545,009	680,969	\$1.09
Tier 3	15+	\$287,481	\$844,872	519,609	\$2.18
Residential/Agricultural					
Tier 1	7	\$234	\$153	4,924	\$0.08
Tier 2	7+	\$6,823	\$19,099	20,361	\$1.27
Multi-Family Residential					
Tier 1	5	\$54,626	\$68,212	877,748	\$0.14
Tier 2	7	\$33,841	\$88,150	156,552	\$0.78
Tier 3	7+	\$92,117	\$264,246	221,138	\$1.61
Commercial/Industrial/School		\$128,673	\$314,183	772,338	\$0.57
Irrigation/Institutional		\$101,596	\$274,855	383,790	\$0.98
Landscape Districts		\$11,869	\$35,658	14,898	\$3.19
SD Zoo Safari Park		\$43,188	\$120,074	135,860	\$1.20
Special Unfiltered		\$77,412	\$0	243,522	\$0.32
Agricultural Use		\$227,589	\$0	925,622	\$0.25
<b>Total</b>		<b>\$1,371,579</b>	<b>\$2,750,456</b>	<b>6,337,703</b>	<b>\$0.22</b>

Table 2-38 shows the proposed commodity rates for each customer class, which is the combination of the three aforementioned cost components: Supply (Table 2-35), Base Delivery (Table 2-36), Treatment, and Peaking (Table 2-37). This table is included in the Appendix for better legibility.

**Table 2-38: Proposed Commodity Rates<sup>5</sup>**

Customer Class	Monthly Tier (kgal)	% Usage	% Bills	Usage (kgal)	Base Delivery	Supply	Peaking	Treatment (Base Only)	Revenue Offset	Total Rate
Single Family Residential										
Tier 1	7	53%	45%	1,380,373	\$2.85	\$2.85	\$0.21	\$0.60	(\$0.94)	<b>\$5.57</b>
Tier 2	15	26%	35%	680,969	\$2.85	\$2.85	\$1.09	\$0.60		<b>\$7.39</b>
Tier 3	15+	20%	20%	519,609	\$2.85	\$2.85	\$2.18	\$0.60		<b>\$8.48</b>
Residential/Agricultural										
Tier 1	7	19%	13%	4,924	\$2.85	\$2.85	\$0.08	\$0.60	(\$0.94)	<b>\$5.44</b>
Tier 2	7+	81%	87%	20,361	\$2.85	\$2.85	\$1.27	\$0.60		<b>\$7.58</b>
Multi-Family Residential										
Tier 1	5	70%	57%	877,748	\$2.85	\$2.85	\$0.14	\$0.60	(\$0.94)	<b>\$5.50</b>
Tier 2	7	12%	21%	156,552	\$2.85	\$2.85	\$0.78	\$0.60		<b>\$7.08</b>
Tier 3	7+	18%	21%	221,138	\$2.85	\$2.85	\$1.61	\$0.60		<b>\$7.91</b>
Commercial/Industrial/School				772,338	\$2.85	\$2.85	\$0.57	\$0.60		<b>\$6.88</b>
Irrigation/Institutional				383,790	\$2.85	\$2.85	\$0.98	\$0.60		<b>\$7.28</b>
Landscape Districts				14,898	\$2.85	\$2.85	\$3.19	\$0.60		<b>\$9.49</b>
SD Zoo Safari Park				135,860	\$2.85	\$2.85	\$1.20	\$0.60		<b>\$7.50</b>
Special Unfiltered				243,522	\$2.85	\$2.85	\$0.32	\$0.00		<b>\$6.02</b>
Agricultural Use				925,622	\$2.17	\$1.52	\$0.25	\$0.00		<b>\$3.94</b>
<b>Total</b>				<b>6,337,703</b>	<b>\$17,420,835</b>	<b>\$16,807,416</b>	<b>\$4,122,035</b>	<b>\$3,124,400</b>	<b>(\$2,129,400)</b>	<b>\$39,374,608</b>

### Proposed Rates

Table 2-39 shows the proposed monthly service charges by meter size for the next five years, starting in March of each year. Table 2-40 and Table 2-41 shows the MWD RTS Charge and CWA IAC Charge for FY

<sup>5</sup> Total may not foot due to rounding.

2017, respectively. **Table 2-42** shows the proposed commodity rates for each customer class and tier. All water supply cost increases are directly passed through to the City's customers. The MWD RTS Charge and CWA IAC Charge are passed through as a component of the fixed charge. Variable water supply costs from CWA, MWD Capacity Charge, CWA Supply Reliability Charge, CWA Customer Service Charge, and CWA Storage Charge are also passed through to the City's customers. Agricultural customers do not pay for the CWA Storage Charge and the CWA Supply Reliability Charge, consistent with CWA policy. The rates shown incorporate the annual revenue adjustments shown in **Table 2-18**. Increases in CWA and MWD charges will be passed through to the City's customers when they occur.

**Table 2-39: Proposed Water Monthly Service Charges**

Monthly Service Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$33.48	\$35.33	\$37.28	\$39.34	\$41.51
1"	\$52.47	\$55.36	\$58.41	\$61.63	\$65.02
1 1/2"	\$99.54	\$105.02	\$110.80	\$116.90	\$123.33
2"	\$156.24	\$164.84	\$173.91	\$183.48	\$193.58
3"	\$335.98	\$354.46	\$373.96	\$394.53	\$416.23
4"	\$600.50	\$633.53	\$668.38	\$705.15	\$743.94
6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12
3/4" x 3"	\$335.98	\$354.46	\$373.96	\$394.53	\$416.23
1" x 4"	\$600.50	\$633.53	\$668.38	\$705.15	\$743.94
1 1/2" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
3/4" x 3" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
1" x 4" x 8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12
2" x 6"	\$1,328.26	\$1,401.32	\$1,478.40	\$1,559.72	\$1,645.51
2" x 8"	\$2,273.20	\$2,398.23	\$2,530.14	\$2,669.30	\$2,816.12

**Table 2-40: Proposed MWD RTS Charges**

MWD Readiness-to-Serve Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$2.46	To be determined by MWD			
1"	\$3.94				
1 1/2"	\$7.38				
2"	\$12.79				
3"	\$23.61				
4"	\$40.32				
6"	\$73.75				
8"	\$127.84				
3/4" x 3"	\$25.33				
1" x 4"	\$39.90				
1 1/2" x 6"	\$79.81				
3/4" x 3" x 6"	\$98.04				
1" x 4" x 8"	\$156.27				
2" x 6"	\$87.82				
2" x 8"	\$121.91				

**Table 2-41: Proposed CWA IAC Charges**

CWA Infrastructure Access Charge	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
5/8" and 3/4"	\$2.79	To be determined by CWA			
1"	\$4.46				
1 1/2"	\$8.36				
2"	\$14.49				
3"	\$26.78				
4"	\$45.72				
6"	\$83.60				
8"	\$144.86				
3/4" x 3"	\$45.72				
1" x 4"	\$69.68				
1 1/2" x 6"	\$139.00				
3/4" x 3" x 6"	\$139.00				
1" x 4" x 8"	\$223.52				
2" x 6"	\$139.00				
2" x 8"	\$223.52				

**Table 2-42: Proposed Water Commodity Rates**

Usage Charge	Monthly Tier (kgal)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Single Family Residential						
Tier 1	7	\$5.57	\$5.88	\$6.21	\$6.56	\$6.93
Tier 2	15	\$7.39	\$7.80	\$8.23	\$8.69	\$9.17
Tier 3	15+	\$8.48	\$8.95	\$9.45	\$9.97	\$10.52
Residential/Agricultural						
Tier 1	7	\$5.44	\$5.74	\$6.06	\$6.40	\$6.76
Tier 2	7+	\$7.58	\$8.00	\$8.44	\$8.91	\$9.41
Multi-Family Residential						
Tier 1	5	\$5.50	\$5.81	\$6.13	\$6.47	\$6.83
Tier 2	7	\$7.08	\$7.47	\$7.89	\$8.33	\$8.79
Tier 3	7+	\$7.91	\$8.35	\$8.81	\$9.30	\$9.82
Commercial/Industrial/School		\$6.88	\$7.26	\$7.66	\$8.09	\$8.54
Irrigation/Institutional		\$7.28	\$7.69	\$8.12	\$8.57	\$9.05
Landscape Districts		\$9.49	\$10.02	\$10.58	\$11.17	\$11.79
SD Zoo Safari Park		\$7.50	\$7.92	\$8.36	\$8.82	\$9.31
Special Unfiltered		\$6.02	\$6.36	\$6.71	\$7.08	\$7.47
Agricultural Use		\$3.94	\$4.16	\$4.39	\$4.64	\$4.90



## 3 WASTEWATER RATE STUDY

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The following subsections present the findings and recommendations of the Rate Study pertaining to the City's wastewater utility.

### 3.1 WASTEWATER SYSTEM

#### *Wastewater System Infrastructure*

The City of Escondido's Wastewater Division safely collects, treats, and disposes of wastewater to produce recycled water. The wastewater system consists of a wastewater treatment plant and disposal facility at the Hale Avenue Resource Recovery Facility (HARRF) and approximately 360 miles of pipelines, 14 pumping stations, more than 360 miles of sewer lines, more than 6,000 sewer manholes, and 14 miles of sewer outfall lines. A brief description of some of the major facilities is as follows:

**Hale Avenue Resource Recovery Facility (HARRF):** The HARRF is a standard activated sludge treatment plant. It was originally constructed in 1959 with a capacity of 1.0 million gallons per day (MGD). Major expansions occurred in 1965 (3.0 MGD), 1973 (11.0 MGD), 1981 (16.5 MGD), 1989 (17.5 MGD), 1998 and 2000 when tertiary treatment processes were added. The plant's current rated capacity is 18 MGD, of which 12.7 MGD is owned by the City. The City of San Diego (San Diego) owns 5.0 MGD with an option for an additional 0.3 MGD of capacity to serve the Rancho Bernardo area at the southern edge of the City. Capital improvement costs related to the treatment plant are shared between the City and San Diego based on ownership and operations costs are shared based on actual wastewater flow.

**Wastewater Discharge:** Treated wastewater is discharged to the Pacific Ocean via a 14-mile long pipeline that connects to the San Elijo Ocean Outfall, an 8,000-foot ocean pipeline. The San Elijo Joint Powers Authority owns and operates the San Elijo Ocean Outfall and the San Elijo Pollution Control Facility. The City leases 79 percent of the estimated 24.3 MGD of Ocean Outfall capacity from the San Elijo Joint Powers Authority. A Pressure Regulating Station is located at the lower end of the Escondido Land Outfall to control flow so that the total does not cause the pressure to exceed the pressure limitation of the reinforced concrete pipe portion of the San Elijo Ocean Outfall. The City sends its dewatered solids to Yuma, Arizona for use as a soil amendment.

**Wastewater Collection System:** Untreated wastewater is conveyed to the HARRF using the City's 360 miles of pipelines. The City's wastewater flows enter the plant by gravity through three primary interceptors. Wastewater from Rancho Bernardo is pumped to the HARRF for treatment through approximately 5 miles of 24-inch force main from the City of San Diego's Pump Station 77 in Rancho Bernardo.

#### *Wastewater and Recycled Water Rates*

The City's current wastewater and recycled water rates are comprised of two components: a fixed monthly charge and a flow charge (kgal). **Table 3-1** shows the fixed wastewater and recycled water charges and

**Table 3-2** shows the effective current rates for FY 2016 for wastewater flow and recycled water use. SFR and MFR customers are applied an 80 percent return factor, Mobile Home customers are applied a 100 percent return factor, and Non-Residential customers are applied a 90 percent return factor.

**Table 3-1: Wastewater and Recycled Water Fixed Monthly Charges (FY 2016)**

FY 2016		
<b>Fixed Charge</b>		
<b>Metered</b>		
Single Family Residential	unit/mo	\$19.16
Multi-Family Residential	unit/mo	\$19.16
Mobile Home	unit/mo	\$19.16
Car Wash/Soft Water Service		\$19.16
Hotel/Motel w/o Dining		\$19.16
Hotel/Motel w/ Dining		\$19.16
Repair Shop/Service Station		\$19.16
Commercial Laundry		\$19.16
Laundromat		\$19.16
Hospital		\$19.16
Grocery Store w/ Meat Dept.		\$19.16
Industrial		\$19.16
Restaurant		\$19.16
All Other Commercial		\$19.16
Discharges to Brine Line		\$19.16
<b>Non-Metered</b>		
High School	student/yr	\$27.39
Elementary/Middle School	student/yr	\$18.26
Church	100 seats/mo	\$38.05
<b>Recycled Water Monthly Meter Charges</b>		
5/8" and 3/4"		\$29.06
1"		\$45.67
1 1/2"		\$87.18
2"		\$136.97
3"		\$294.68
4"		\$527.08
6"		\$1,166.22
8"		\$1,996.25

**Table 3-2: Wastewater Flow and Recycled Water Charges (FY 2016)**

	FY 2016
<b>Flow Charge (\$/kgal)</b>	
Single Family Residential	\$3.70
Multi-Family Residential	\$3.07
Mobile Home	\$2.12
Car Wash/Soft Water Service	\$5.98
Hotel/Motel w/o Dining	\$6.82
Hotel/Motel w/ Dining	\$9.87
Repair Shop/Service Station	\$6.28
Commercial Laundry	\$7.08
Laundromat	\$6.23
Hospital	\$6.66
Grocery Store w/ Meat Dept.	\$10.74
Industrial	\$8.92
Restaurant	\$10.58
All Other Commercial	\$7.00
Discharges to Brine Line	\$0.87
Brewery	\$6.36
<b>Recycled Water</b>	
All Usage	\$3.85
Rincon	\$1.82
SDG&E	\$3.36

## 3.2 WASTEWATER ACCOUNTS AND FLOW

### *Growth Assumptions*

The customer accounts and usage for FY 2016 are used as the basis for projecting wastewater revenues during the Study period. With direction from City staff, RFC assumed that the City will experience no account growth during all five years of the Study period. To project future years' wastewater flow, RFC assumed 0 percent increase in flow due to accounts and no change in wastewater flow generation from FY 2016 levels a demand factor of 100 percent for all five years of the Study. For example, the projected water usage in FY 2017 will be 0 percent greater than that in FY 2016.

### *Projected Number of Accounts*

The total number of wastewater accounts is shown in **Table 3-3** and all recycled water accounts is shown in **Table 3-4**. Recycled water accounts are expected to increase by 12 in FY 2018 as mentioned previously.

**Table 3-3: Projected Wastewater Accounts**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Metered</b>					
2 Single Family Residential	25,221	25,221	25,221	25,221	25,221
3 Multi-Family Residential	17,519	17,519	17,519	17,519	17,519
4 Mobile Home	2,513	2,513	2,513	2,513	2,513
5 Car Wash/Soft Water Service	13	13	13	13	13
6 Hotel/Motel w/o Dining	20	20	20	20	20
7 Hotel/Motel w/ Dining	0	0	0	0	0
8 Repair Shop/Service Station	162	162	162	162	162
9 Commercial Laundry	0	0	0	0	0
10 Laundromat	24	24	24	24	24
11 Hospital	8	8	8	8	8
12 Grocery Store w/ Meat Dept.	32	32	32	32	32
13 Industrial	88	88	88	88	88
14 Restaurant	263	263	263	263	263
15 All Other Commercial	1,424	1,424	1,424	1,424	1,424
16 Discharges to Brine Line	0	0	0	0	0
<b>17 Subtotal</b>	<b>47,287</b>	<b>47,287</b>	<b>47,287</b>	<b>47,287</b>	<b>47,287</b>
<b>18 Non-Metered</b>					
19 High School	9,481	9,481	9,481	9,481	9,481
20 Elementary/Middle School	21,437	21,437	21,437	21,437	21,437
21 Church	275	275	275	275	275
<b>22 Subtotal</b>	<b>31,193</b>	<b>31,193</b>	<b>31,193</b>	<b>31,193</b>	<b>31,193</b>
<b>23 Total</b>	<b>78,480</b>	<b>78,480</b>	<b>78,480</b>	<b>78,480</b>	<b>78,480</b>

**Table 3-4: Projected Recycled Water Accounts**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Recycled Water</b>					
2 5/8" and 3/4"	0	0	0	0	0
3 1"	1	1	1	1	1
4 1 1/2"	2	2	2	2	2
5 2"	9	14	14	14	14
6 3"	3	4	4	4	4
7 4"	5	8	8	8	8
8 6"	4	7	7	7	7
9 8"	0	0	0	0	0
<b>10 Subtotal</b>	<b>24</b>	<b>36</b>	<b>36</b>	<b>36</b>	<b>36</b>

### *Billed Wastewater Flow*

Projected billed wastewater flow is calculated by multiplying actual water usage with the return factors shown in **Table 3-2**. Projected billed wastewater flow for wastewater and recycled water customers is shown in **Table 3-5**.

**Table 3-5: Projected Billed Wastewater Flow and Recycled Water Usage**

Flow (kgal)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Wastewater Flow</b>					
2 Single Family Residential	1,560,038	1,560,038	1,560,038	1,560,038	1,560,038
3 Multi-Family Residential	899,973	899,973	899,973	899,973	899,973
4 Mobile Home	100,073	100,073	100,073	100,073	100,073
5 Car Wash/Soft Water Service	17,200	17,200	17,200	17,200	17,200
6 Hotel/Motel w/o Dining	25,673	25,673	25,673	25,673	25,673
7 Hotel/Motel w/ Dining	0	0	0	0	0
8 Repair Shop/Service Station	32,623	32,623	32,623	32,623	32,623
9 Commercial Laundry	0	0	0	0	0
10 Laundromat	33,332	33,332	33,332	33,332	33,332
11 Hospital	22,750	22,750	22,750	22,750	22,750
12 Grocery Store w/ Meat Dept.	29,475	29,475	29,475	29,475	29,475
13 Industrial	21,848	21,848	21,848	21,848	21,848
14 Restaurant	131,456	131,456	131,456	131,456	131,456
15 All Other Commercial	277,810	277,810	277,810	277,810	277,810
16 Discharges to Brine Line	12,630	12,630	12,630	12,630	12,630
17 Brewery	0	0	0	0	0
<b>18 Total</b>	<b>3,164,880</b>	<b>3,164,880</b>	<b>3,164,880</b>	<b>3,164,880</b>	<b>3,164,880</b>
<b>19 Recycled Water</b>					
20 Escondido	194,743	194,743	194,743	194,743	194,743
21 Agriculture	0	255,250	510,500	765,750	812,817
22 Rincon	125,225	125,225	125,225	125,225	125,225
23 SDG&E	802,670	802,670	802,670	802,670	802,670
<b>24 Total</b>	<b>1,122,637</b>	<b>1,377,887</b>	<b>1,633,137</b>	<b>1,888,387</b>	<b>1,935,455</b>

### 3.3 WASTEWATER REVENUE REQUIREMENTS

A review of a utility's revenue requirements is a key first step in the rate design process. The review involves an analysis of annual operating revenues under the current rates, miscellaneous revenues, O&M expenses, capital expenditures, transfers between funds, and reserve requirements. This subsection of the Report provides a discussion of the projected revenues, O&M expenses, capital expenditures, capital financing plan, debt service requirements, and revenue adjustments necessary to ensure the financial stability of the wastewater enterprise. The wastewater system revenues and expenditures are discussed from a City perspective and the discussion on required revenue adjustments relates exclusively to the City's customers.

#### *Growth Assumptions and Escalation Factors*

To estimate the wastewater utility's future year's revenues and expenditures, RFC utilized growth assumptions and escalation factors, respectively. **Table 3-6** shows the revenue growth assumptions and expense escalation factors that were used in the Study.

**Table 3-6: Wastewater Growth Assumptions and Inflationary Factors**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>Revenue Growth</b>					
Non-Rate Revenues	1%	1%	1%	1%	1%
Reserve Interest Rate	1%	1%	1%	1%	1%
<b>Escalation Factors</b>					
General	3%	3%	3%	3%	3%
Salary	3%	3%	3%	3%	3%
Benefits	5%	5%	5%	5%	5%
Utilities	5%	5%	5%	5%	5%
Water Costs	5%	5%	5%	5%	5%
Capital	3%	3%	3%	3%	3%

### ***Wastewater System Revenues***

The City's Wastewater Division derives its annual operating and capital revenues from a number of sources. The principal sources of operating revenues from rates are the wastewater service charges from the City's users. Other revenue sources include miscellaneous operating revenues such as installation fees, penalties, etc. Capital revenue sources include reimbursements, investment earnings, etc.

**Table 3-7** shows the wastewater utility's operating revenues and **Table 3-8** shows the capital revenues for the Study period.

### ***Wastewater System Expenditures***

For sound financial operation of the City's wastewater system, the revenues generated must be sufficient to meet the revenue requirements or cash obligations of the system. Revenue requirements include O&M expenses, CIP expenditures, principal and interest payments on existing debt, and other obligations.

### ***Operation and Maintenance Expenses***

O&M expenditures are a normal obligation of the wastewater system and are met from operating revenues as they are incurred. **Table 3-9** shows the projected O&M expenses for the wastewater system.

**Table 3-7: Projected Wastewater Operating Revenues**

Operating Revenues - Fund 558	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Stormwater Management Charge	\$0	\$0	\$0	\$0	\$0
2 Reimb from Outside Agencies	\$732	\$740	\$747	\$754	\$762
3 Penalties	\$7,575	\$7,651	\$7,727	\$7,805	\$7,883
4 Sewer Service Charges	\$26,068,782	\$26,068,782	\$26,068,782	\$26,068,782	\$26,068,782
5 Sewer Development Fee	\$467,894	\$472,573	\$477,299	\$482,072	\$486,892
6 Treatment Charge - San Diego	\$2,624,257	\$2,650,499	\$2,677,004	\$2,703,774	\$2,730,812
7 Othr Curr Serv Cge - Sewer	\$7,258	\$7,331	\$7,404	\$7,478	\$7,553
8 Restaurant FOG Pretreatment	\$83,185	\$84,017	\$84,857	\$85,705	\$86,562
9 CIP Reimbursement	\$0	\$0	\$0	\$0	\$0
10 Agency Incentives	\$889,732	\$1,472,818	\$1,890,532	\$2,232,654	\$2,287,358
11 Pension Expense-GASB 68	\$803,893	\$811,932	\$820,051	\$828,252	\$836,534
12 Other Interest-Non Investment	\$61,792	\$62,410	\$63,034	\$63,665	\$64,301
13 Contributions	\$0	\$0	\$0	\$0	\$0
14 Developer Contributions	\$0	\$0	\$0	\$0	\$0
15 Interest-Trustee	\$0	\$0	\$0	\$0	\$0
16 Investment Earnings	\$108,006	\$112,342	\$125,052	\$149,527	\$173,079
17 Bank Acct Analysis Fees-Contra	(\$27,113)	(\$27,384)	(\$27,657)	(\$27,934)	(\$28,213)
18 Cr. Card Merchant Fees-Contra	(\$96,146)	(\$97,107)	(\$98,078)	(\$99,059)	(\$100,050)
19 Bad Debt Recoveries	\$0	\$0	\$0	\$0	\$0
20 Invest-Unrealized Gain or Loss	\$0	\$0	\$0	\$0	\$0
21 Gain/Loss Disp of Fixed Assets	\$0	\$0	\$0	\$0	\$0
22 Trstee Invest-Unreal Gain/Loss	\$0	\$0	\$0	\$0	\$0
23 Bad Debt Offset - Contra Acct	(\$20,055)	(\$20,255)	(\$20,458)	(\$20,662)	(\$20,869)
24 Prior Period Exp/Rev	\$0	\$0	\$0	\$0	\$0
25 Other Revenue	\$146,291	\$147,753	\$149,231	\$150,723	\$152,230
26 Clearing Account	\$0	\$0	\$0	\$0	\$0
27 Transfers In	\$0	\$0	\$0	\$0	\$0
28 Transfers Out	\$0	\$0	\$0	\$0	\$0
<b>29 Total Wastewater Revenue</b>	<b>\$31,126,084</b>	<b>\$31,754,102</b>	<b>\$32,225,527</b>	<b>\$32,633,537</b>	<b>\$32,753,617</b>
30 Recycled Water Usage	\$749,761	\$749,761	\$749,761	\$749,761	\$749,761
31 Recycled Water Service Charge	\$119,809	\$195,140	\$195,140	\$195,140	\$195,140
32 Sale of Recyclable Water/Wholesale	\$3,026,250	\$3,026,250	\$3,026,250	\$3,026,250	\$3,026,250
<b>33 Total Recycled Water Revenue</b>	<b>\$3,895,820</b>	<b>\$3,971,151</b>	<b>\$3,971,151</b>	<b>\$3,971,151</b>	<b>\$3,971,151</b>

**Table 3-8: Projected Wastewater Capital Revenues**

Capital Revenues - Fund 557	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 County Grants	\$0	\$0	\$0	\$0	\$0
2 State Grants	\$0	\$0	\$0	\$0	\$0
3 Interest-Trustee	\$0	\$0	\$0	\$0	\$0
4 Trstee Invest-Unreal Gain/Loss	\$0	\$0	\$0	\$0	\$0
5 Clearing Account	\$0	\$0	\$0	\$0	\$0
6 City of San Diego Reimbursement	\$5,256,601	\$737,690	\$362,828	\$560,569	\$32,077
7 Transfers In	\$0	\$0	\$0	\$0	\$0
8 Transfers Out	\$0	\$0	\$0	\$0	\$0
<b>9 Total</b>	<b>\$5,256,601</b>	<b>\$737,690</b>	<b>\$362,828</b>	<b>\$560,569</b>	<b>\$32,077</b>

**Table 3-9: Projected Wastewater O&M Expenses**

Operating Expenditures - Fund 558		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	<b>Wastewater - Dept. 420</b>					
2	<b>Employee Services</b>					
3	Regular Full-Time	\$6,059,845	\$6,241,640	\$6,428,890	\$6,621,756	\$6,820,409
4	Temporary Part-time	\$64,190	\$66,116	\$68,099	\$70,142	\$72,246
5	Overtime	\$253,660	\$261,270	\$269,108	\$277,181	\$285,497
6	Other Employee Overhead	\$199,140	\$205,114	\$211,268	\$217,606	\$224,134
7	PERS	\$1,868,335	\$1,924,385	\$1,982,117	\$2,041,580	\$2,102,828
8	Medical	\$802,535	\$842,662	\$884,795	\$929,035	\$975,486
9	Workers' Compensation	\$486,535	\$510,862	\$536,405	\$563,225	\$591,386
10	Flexible Benefits	\$86,225	\$90,536	\$95,063	\$99,816	\$104,807
11	<b>Maintenance &amp; Operations</b>					
12	Office/Operating Supplies	\$393,500	\$405,305	\$417,464	\$429,988	\$442,888
13	Safety Equipment	\$20,000	\$20,600	\$21,218	\$21,855	\$22,510
14	Chemicals	\$625,000	\$656,250	\$689,063	\$723,516	\$759,691
15	Minor Tools & Equipment	\$93,000	\$95,790	\$98,664	\$101,624	\$104,672
16	Maintenance of Equipment	\$850,000	\$875,500	\$901,765	\$928,818	\$956,682
17	Major Maintenance	\$0	\$0	\$0	\$0	\$0
18	Professional Services	\$1,930,000	\$1,987,900	\$2,047,537	\$2,108,963	\$2,172,232
19	Other Building Repairs/Maint.	\$0	\$0	\$0	\$0	\$0
20	Training & Meetings	\$40,000	\$41,200	\$42,436	\$43,709	\$45,020
21	Mileage Reimbursement	\$650	\$670	\$690	\$710	\$732
22	Dues & Subscriptions	\$12,300	\$12,669	\$13,049	\$13,441	\$13,844
23	Other Duplicating	\$1,250	\$1,288	\$1,326	\$1,366	\$1,407
24	Advertising & Printing	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
25	Utilities	\$2,047,750	\$2,150,138	\$2,257,644	\$2,370,527	\$2,489,053
26	City Water	\$30,000	\$31,500	\$33,075	\$34,729	\$36,465
27	Other Telephone	\$25,000	\$25,750	\$26,523	\$27,318	\$28,138
28	Rent	\$336,765	\$346,868	\$357,274	\$367,992	\$379,032
29	Other Expense	\$198,720	\$204,682	\$210,822	\$217,147	\$223,661
30	Software	\$216,915	\$223,422	\$230,125	\$237,029	\$244,140
31	Minor Office Equipment	\$48,500	\$49,955	\$51,454	\$52,997	\$54,587
32	Donated Assets	\$0	\$0	\$0	\$0	\$0
33	<b>Capital Outlay</b>					
34	Other Capital Outlay	\$513,500	\$528,905	\$544,772	\$561,115	\$577,949
35	Capital Contra Clearing	\$0	\$0	\$0	\$0	\$0
36	Construction	\$0	\$0	\$0	\$0	\$0
37	Office Furniture	\$0	\$0	\$0	\$0	\$0
38	<b>Internal Service</b>					
39	Building Maintenance	\$160,675	\$165,495	\$170,460	\$175,574	\$180,841
40	Fleet Services	\$589,185	\$606,861	\$625,066	\$643,818	\$663,133
41	Duplicating	\$18,745	\$19,307	\$19,887	\$20,483	\$21,098
42	Telecommunications	\$37,895	\$39,032	\$40,203	\$41,409	\$42,651
43	Radio Communications	\$21,065	\$21,697	\$22,348	\$23,018	\$23,709
44	Mail Services	\$1,350	\$1,391	\$1,432	\$1,475	\$1,519
45	Office Automation	\$103,090	\$106,183	\$109,368	\$112,649	\$116,029
46	Insurance	\$442,720	\$456,002	\$469,682	\$483,772	\$498,285
47	<b>Allocations</b>					
48	Allocations In	\$3,210,660	\$3,306,980	\$3,406,189	\$3,508,375	\$3,613,626
49	Allocations Out	(\$1,905,125)	(\$1,962,279)	(\$2,021,147)	(\$2,081,782)	(\$2,144,235)
50	<b>Subtotal</b>	<b>\$19,888,575</b>	<b>\$20,566,793</b>	<b>\$21,269,436</b>	<b>\$21,997,440</b>	<b>\$22,751,780</b>



**Table 3-9: Projected Wastewater O&M Expenses (cont'd)**

Operating Expenditures - Fund 558		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
51	<b>Recycled Water - Dept. 422</b>					
52	<b>Employee Services</b>					
53	Regular Full-Time	\$61,750	\$63,603	\$65,511	\$67,476	\$69,500
54	Overtime	\$0	\$0	\$0	\$0	\$0
55	Other Employee Overhead	\$2,160	\$2,225	\$2,292	\$2,360	\$2,431
56	PERS	\$19,020	\$19,591	\$20,178	\$20,784	\$21,407
57	Medical	\$14,565	\$15,293	\$16,058	\$16,861	\$17,704
58	Workers' Compensation	\$4,950	\$5,198	\$5,457	\$5,730	\$6,017
59	<b>Maintenance &amp; Operations</b>					
60	Office/Operating Supplies	\$61,805	\$63,659	\$65,569	\$67,536	\$69,562
61	Chemicals	\$575,000	\$603,750	\$633,938	\$665,634	\$698,916
62	Minor Tools & Equipment	\$0	\$0	\$0	\$0	\$0
63	Maintenance of Equipment	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551
64	Professional Services	\$101,000	\$104,030	\$107,151	\$110,365	\$113,676
65	Training & Meetings	\$0	\$0	\$0	\$0	\$0
66	Mileage Reimbursement	\$0	\$0	\$0	\$0	\$0
67	Dues & Subscriptions	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502
68	Advertising & Printing	\$500	\$515	\$530	\$546	\$563
69	Utilities	\$535,000	\$561,750	\$589,838	\$619,329	\$650,296
70	Other Expense	\$60,000	\$61,800	\$63,654	\$65,564	\$67,531
71	<b>Capital Outlay</b>					
72	Other Capital Outlay	\$0	\$0	\$0	\$0	\$0
73	<b>Internal Service</b>					
74	Fleet Services	\$3,190	\$3,286	\$3,384	\$3,486	\$3,590
75	Office Automation	\$1,335	\$1,375	\$1,416	\$1,459	\$1,503
76	Insurance	\$10,305	\$10,614	\$10,933	\$11,261	\$11,598
77	<b>Allocations</b>					
78	Allocations In	\$698,550	\$719,507	\$741,092	\$763,324	\$786,224
79	<b>Subtotal</b>	<b>\$2,253,130</b>	<b>\$2,343,314</b>	<b>\$2,437,333</b>	<b>\$2,535,359</b>	<b>\$2,637,571</b>
80	<b>Environmental Program - Dept. 440</b>					
81	<b>Employee Services</b>					
82	Regular Full-Time	\$687,175	\$707,790	\$729,024	\$750,895	\$773,422
83	Overtime	\$0	\$0	\$0	\$0	\$0
84	Other Employee Overhead	\$23,410	\$24,112	\$24,836	\$25,581	\$26,348
85	PERS	\$211,660	\$218,010	\$224,550	\$231,287	\$238,225
86	Medical	\$107,690	\$113,075	\$118,728	\$124,665	\$130,898
87	Workers' Compensation	\$42,820	\$44,961	\$47,209	\$49,570	\$52,048
88	Flexible Benefits	\$23,365	\$24,533	\$25,760	\$27,048	\$28,400
89	<b>Maintenance &amp; Operations</b>					
90	Office/Operating Supplies	\$4,000	\$4,120	\$4,244	\$4,371	\$4,502
91	Maintenance of Equipment	\$5,000	\$5,150	\$5,305	\$5,464	\$5,628
92	Professional Services	\$421,915	\$434,572	\$447,610	\$461,038	\$474,869
93	Training & Meetings	\$8,000	\$8,240	\$8,487	\$8,742	\$9,004
94	Mileage Reimbursement	\$2,000	\$2,060	\$2,122	\$2,185	\$2,251
95	Dues & Subscriptions	\$2,570	\$2,647	\$2,727	\$2,808	\$2,893
96	Advertising & Printing	\$6,000	\$6,180	\$6,365	\$6,556	\$6,753
97	Other Telephone	\$2,400	\$2,472	\$2,546	\$2,623	\$2,701
98	Other Expense	\$38,000	\$39,140	\$40,314	\$41,524	\$42,769
99	Software	\$200	\$206	\$212	\$219	\$225
100	Minor Office Equipment	\$3,000	\$3,090	\$3,183	\$3,278	\$3,377
101	Minor Tools & Equipment	\$0	\$0	\$0	\$0	\$0
102	<b>Capital Outlay</b>					
103	Other Capital Outlay	\$100,000	\$103,000	\$106,090	\$109,273	\$112,551

**Table 3-9: Projected Wastewater O&M Expenses (cont'd)**

	Operating Expenditures - Fund 558	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
104 <b>Internal Service</b>						
105 Fleet Services		\$32,515	\$33,490	\$34,495	\$35,530	\$36,596
106 Duplicating		\$0	\$0	\$0	\$0	\$0
107 Office Automation		\$2,665	\$2,745	\$2,827	\$2,912	\$2,999
108 Insurance		\$16,400	\$16,892	\$17,399	\$17,921	\$18,458
109 <b>Allocations</b>						
110 Allocations In		\$337,105	\$347,218	\$357,635	\$368,364	\$379,415
111 Allocations Out		(\$351,255)	(\$361,793)	(\$372,646)	(\$383,826)	(\$395,341)
112 <b>Subtotal</b>		<b>\$1,726,635</b>	<b>\$1,781,912</b>	<b>\$1,839,020</b>	<b>\$1,898,025</b>	<b>\$1,958,991</b>
113 <b>Total</b>		<b>\$23,868,340</b>	<b>\$24,692,019</b>	<b>\$25,545,790</b>	<b>\$26,430,824</b>	<b>\$27,348,342</b>

### *Capital Improvement Plan*

Table 3-10 shows the City's inflated five-year CIP by project type. The CIP is projected for future years using the capital inflationary factor in Table 3-6.

**Table 3-10: Inflated Wastewater Capital Projects**

Capital Projects	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
<b>1 Maintenance</b>					
2 Outfall Maintenance	\$5,600,000	\$2,221,278	\$1,166,990	\$1,092,727	\$0
3 Sewer Main Oversizing	\$50,000	\$103,000	\$53,045	\$54,636	\$0
4 Wwtr Major Maint Projec	\$200,000	\$206,000	\$106,090	\$109,273	\$112,551
5 Manhole Rehabilitaion	\$0	\$0	\$0	\$901,500	\$225,102
6 Collection System Mainte	\$0	\$0	\$0	\$273,182	\$0
7 Lift Stn Major Maintenanc	\$200,000	\$412,000	\$53,045	\$54,636	\$56,275
8 Digester Cleaning	\$0	\$0	\$0	\$764,909	\$0
9 LS1 Electrical Service Relc	\$350,000	\$0	\$0	\$0	\$0
10 Citywide Stormdrain Mair	\$0	\$0	\$0	\$0	\$0
11 Permitted Channel Maint	\$0	\$0	\$0	\$0	\$0
12 Eagle Scout Lake Maint	\$0	\$0	\$0	\$0	\$0
<b>13 Subtotal</b>	<b>\$6,400,000</b>	<b>\$2,942,278</b>	<b>\$1,379,170</b>	<b>\$3,250,863</b>	<b>\$393,928</b>
<b>14 Project Studies</b>					
15 Indirect Potable Reuse St	\$150,000	\$257,500	\$212,180	\$218,545	\$225,102
<b>16 Subtotal</b>	<b>\$150,000</b>	<b>\$257,500</b>	<b>\$212,180</b>	<b>\$218,545</b>	<b>\$225,102</b>
<b>17 In Construction</b>					
18 Land Outfall Cathodic Prc	\$31,198	\$0	\$0	\$0	\$0
19 Outfall Mitigation Project	\$113,016	\$0	\$0	\$0	\$0
20 Southwest Sewer	\$9,721,992	\$0	\$0	\$0	\$0
21 Primary Building Upgrade	\$12,500,000	\$161,107	\$0	\$0	\$0
<b>22 Subtotal</b>	<b>\$22,366,206</b>	<b>\$161,107</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>23 In Design</b>					
24 Lift Stn #1 & Force Main	\$500,000	\$9,270,000	\$7,100,270	\$0	\$0
<b>25 Subtotal</b>	<b>\$500,000</b>	<b>\$9,270,000</b>	<b>\$7,100,270</b>	<b>\$0</b>	<b>\$0</b>
<b>26 Pending</b>					
27 Trunk Mn Expan/Auto Pk	\$0	\$0	\$0	\$0	\$0
28 SL Reidy Creek/CCP - Vill	\$0	\$0	\$0	\$0	\$0
29 Trunk Main/CCP - Auto Pl	\$0	\$0	\$0	\$0	\$0
30 Lift Station No 3 Upgrade	\$0	\$257,500	\$0	\$0	\$0
31 Sewer Pipe Replacement	\$200,000	\$0	\$4,243,600	\$0	\$2,588,670
32 Alley Rehabilitation Projec	\$200,000	\$1,030,000	\$212,180	\$34,595	\$0
<b>33 Subtotal</b>	<b>\$400,000</b>	<b>\$1,287,500</b>	<b>\$4,455,780</b>	<b>\$34,595</b>	<b>\$2,588,670</b>
<b>34 Recycled Water</b>					
35 HARRF Influent Pump Stat	\$234,961	\$0	\$0	\$0	\$0
36 HARRF Expansion Ph III O	\$57,279	\$0	\$0	\$0	\$0
37 RW Easterly Main Extensi	\$2,691,480	\$0	\$0	\$0	\$0
38 RW Easterly Main & Tank	\$8,500,000	\$1,082,499	\$0	\$0	\$0
39 HARRF Upgrades (design)	\$0	\$0	\$0	\$0	\$0
40 HARRF Odor Control	\$0	\$0	\$0	\$0	\$0
41 HARRF - Collections Main	\$1,500,000	\$1,922,034	\$0	\$0	\$0
42 RW Easterly AG Distributi	\$4,200,000	\$4,532,000	\$7,185	\$0	\$0
43 RW Easterly AG RO & PS	\$21,000,000	\$10,712,000	\$5,344,909	\$0	\$0
44 HARRF Filter-CCB Replace	\$0	\$1,030,000	\$8,487,200	\$2,185,454	\$0
45 Brine Line Broadway to H	\$5,200,000	\$256,737	\$0	\$0	\$0
46 Digester Replacement	\$0	\$0	\$11,669,900	\$10,927,270	\$2,251,018
47 HARRF Capacity Upgrade	\$0	\$0	\$0	\$0	\$1,688,263
48 HARRF Capacity Upgrade	\$0	\$0	\$0	\$0	\$0
<b>49 Subtotal</b>	<b>\$43,383,720</b>	<b>\$19,535,269</b>	<b>\$25,509,194</b>	<b>\$13,112,724</b>	<b>\$3,939,281</b>
<b>50 Total Capital Projects</b>	<b>\$73,199,926</b>	<b>\$33,453,655</b>	<b>\$38,656,594</b>	<b>\$16,616,727</b>	<b>\$7,146,981</b>
<b>51 Total, less RW</b>	<b>\$29,816,206</b>	<b>\$13,918,386</b>	<b>\$13,147,400</b>	<b>\$3,504,003</b>	<b>\$3,207,700</b>

**Table 3-11** shows the capital financing plan for the Study period by funding source. Debt funding consists of the proposed SRF loans, described in the next section. Rate funding consists of all capital project costs that are not funded through new debt.

**Table 3-11: Wastewater Capital Financing Plan**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Total CIP	\$73,199,926	\$33,453,655	\$38,656,594	\$16,616,727	\$7,146,981
2 Debt Proceeds	\$38,900,000	\$17,613,236	\$25,509,194	\$13,112,724	\$3,939,281
3 Debt Proceeds Balance	\$38,900,000	\$17,613,236	\$25,509,194	\$13,112,724	\$3,939,281
4 Rate Funded CIP	\$34,299,926	\$15,840,419	\$13,147,400	\$3,504,003	\$3,207,700
5 Debt Funded CIP	\$38,900,000	\$17,613,236	\$25,509,194	\$13,112,724	\$3,939,281

### *Existing and Proposed Debt Service*

The City has seven existing debt issues and has an annual debt service of approximately \$5.9 million. RFC proposes that the City borrow \$84.9 million in SRF loans over the Study period. The terms for the SRF loans are 2 percent interest for 20 years with a 0 percent issuance cost. The City is not expected to issue any additional debt during the five-year period. The existing and proposed debt service is detailed in **Table 3-12**.

**Table 3-12: Wastewater Existing and Proposed Debt Service**

Debt Service	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1 Existing Debt	\$5,918,539	\$5,917,939	\$5,916,844	\$5,920,816	\$5,930,016
2 Proposed SRF Loan	\$0	\$0	\$925,968	\$3,777,867	\$4,493,563
3 <b>Total Debt Service</b>	<b>\$5,918,539</b>	<b>\$5,917,939</b>	<b>\$6,842,812</b>	<b>\$9,698,683</b>	<b>\$10,423,579</b>

### *Proposed Revenue Adjustment*

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and reserves balances. The revenue adjustments occur in March of each year. The proposed revenue adjustments and SRF debt would enable the City to execute the CIP as shown in **Table 3-10**.

**Table 3-13** shows the proposed revenue adjustments approved by City staff. The revenue adjustments are smoothed to avoid rate spikes. Although the following table shows anticipated revenue adjustments for the years following FY 2017, the City will review and confirm the needed revenue adjustments on an annual basis. There are no additional revenue adjustments needed for the recycled water commodity rates.

**Table 3-13: Proposed Wastewater Revenue Adjustments**

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue Adjustments - WW	5.50%	5.50%	5.50%	5.50%	5.50%
Revenue Adjustments - RW	0%	0%	0%	0%	0%
Effective Month	March	March	March	March	March

### Proposed Financial Plan

Table 3-14 displays the cash flow detail over the next five fiscal years, including the additional revenue from the proposed revenue adjustments and the net annual cash flow of the City.

**Table 3-14: Proposed Wastewater Financial Plan**

			FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Revenue from Existing Rates		\$26,068,782	\$26,068,782	\$26,068,782	\$26,068,782	\$26,068,782
2	Rev. Adj.	% Adj. Effective Month					
3	FY 2017	5.5% March	\$477,928	\$1,433,783	\$1,433,783	\$1,433,783	\$1,433,783
4	FY 2018	5.5% March		\$504,214	\$1,512,641	\$1,512,641	\$1,512,641
5	FY 2019	5.5% March			\$531,945	\$1,595,836	\$1,595,836
6	FY 2020	5.5% March				\$561,202	\$1,683,607
7	FY 2021	5.5% March					\$592,069
8	<b>Subtotal</b>		<b>\$477,928</b>	<b>\$1,937,997</b>	<b>\$3,478,370</b>	<b>\$5,103,463</b>	<b>\$6,817,936</b>
9	Total Revenues from Rates		\$26,546,710	\$28,006,779	\$29,547,152	\$31,172,245	\$32,886,719
10	Other Operating Revenue		\$4,059,564	\$4,100,160	\$4,141,161	\$4,182,573	\$4,224,398
11	Interest Income		\$108,006	\$112,342	\$125,052	\$149,527	\$173,079
12	<b>Total Revenues</b>		<b>\$30,714,280</b>	<b>\$32,219,281</b>	<b>\$33,813,365</b>	<b>\$35,504,345</b>	<b>\$37,284,196</b>
13	O&M Expenses						
14	Wastewater - Department 420		\$19,888,575	\$20,566,793	\$21,269,436	\$21,997,440	\$22,751,780
15	Environmental Program - Department 440		\$1,726,635	\$1,781,912	\$1,839,020	\$1,898,025	\$1,958,991
16	Additional Annual O&M Costs for New Programs		\$0	\$0	\$0	\$0	\$534,055
17	<b>Total Expenses</b>		<b>\$21,615,210</b>	<b>\$22,348,705</b>	<b>\$23,108,456</b>	<b>\$23,895,465</b>	<b>\$24,710,771</b>
18	Capital Projects						
19	Rate Funded CIP		\$34,299,926	\$15,840,419	\$13,147,400	\$3,504,003	\$3,207,700
20	<b>Total Capital Projects</b>		<b>\$34,299,926</b>	<b>\$15,840,419</b>	<b>\$13,147,400</b>	<b>\$3,504,003</b>	<b>\$3,207,700</b>
21	Debt Service						
22	Existing Debt Service		\$4,189,686	\$4,189,086	\$4,187,991	\$4,191,963	\$4,201,163
23	Proposed Debt Service		\$0	\$0	\$629,865	\$2,937,681	\$3,653,377
24	<b>Total Debt Service</b>		<b>\$4,189,686</b>	<b>\$4,189,086</b>	<b>\$4,817,856</b>	<b>\$7,129,645</b>	<b>\$7,854,541</b>
25	<b>Net Cash Flow</b>		<b>(\$29,390,542)</b>	<b>(\$10,158,930)</b>	<b>(\$7,260,347)</b>	<b>\$975,233</b>	<b>\$1,511,184</b>
26	Debt Service Coverage		292%	248%	235%	172%	165%
27	Required Coverage		125%	125%	125%	125%	125%

## 3.4 COST OF SERVICE ANALYSIS

Since a significant of residential water usage is for irrigation purposes, a mass balance on the influent at the treatment plant would allow us to better estimate the residential wastewater flows and strength.

### Mass Balance

Cost of service analysis required that costs be assigned to customers in proportion to their loadings. Customers are divided into classes based on their strength. Since measurement of wastewater flow is expensive and prone to errors, most customers' wastewater flows are not metered. The flow from customers can be estimated based on their water usage.

A significant quantity of wastewater results from infiltration and inflow (I&I), which is water that enters the collection system during rain-related events, run-off, etc. To determine this, a mass balance analysis is done by taking the total flow and strength of the wastewater influent into the plant and reducing that by the wastewater loadings of the City's non-residential customers and I&I. **Table 3-15** shows the total annual units of flow and strength for each customer class based on the result of the mass balance analysis. Due to changes to their consumption patterns, RFC proposed that the City increased the MFR return factor to 95 percent from the current 80 percent. With this change, the residential flow and strength results are within the acceptable range. The flow per EDU works out to 4.7 kgal per month.

**Table 3-15: Wastewater Mass Balance**

FY 2015		Flow	BOD	TSS	Flow	BOD	TSS
		MG/yr	lbs/yr	lbs/yr	kgal/yr	mg/L	mg/L
1	Plant Influent	4,287	7,613,647	10,390,052	4,287,200	213	290
2	Escondido Flow	77% 3,318	6,117,763	7,745,976	3,318,300	221	280
3	San Diego Flow	23% 969	1,495,885	2,644,077	968,900	185	327
4	Less: Infiltration & Inflow	1.6% 69	28,623	28,623	68,595	50	50
5	<b>Net Escondido Flow</b>	<b>3,265</b>	<b>6,095,609</b>	<b>7,723,821</b>	<b>3,265,207</b>	<b>224</b>	<b>283</b>
6	Commercial Customers	592	2,342,719	2,028,381	592,167	474	410
7	Schools	104	112,963	95,584	104,123	130	110
8	Churches	20	21,779	18,429	20,075	130	110
9	Residential Customers	2,549	3,618,147	5,581,428	2,548,843	170	262

### *Functionalization of Revenue Requirements*

A cost of service analysis distributes a utility's revenue requirements (costs) to each customer class. After determining a utility's revenue requirements, the next step in a cost of service analysis is to functionalize its O&M costs, based on the City's current O&M classification:

- » Collection
- » Treatment

The functionalization of costs allows us to better allocate the functionalized costs to the cost causation components. The cost causation components include:

- » Flow
- » BOD
- » TSS
- » Customer
- » General

### *Allocation of Functionalized Expenses to Cost Components*

**Table 3-16** allocates the O&M expenses to each cost causation component (details as shown in Appendix B). The functional costs, which are represented by each expense line item of the City's budget, are allocated according to industry standards based on the nature of the wastewater function. Some costs which cannot be readily classified into one of the functions are allocated to General, and then allocated amongst the

other cost causation components proportionate to the overall cost allocation. **Table 3-17** shows the total resulting cost causation component allocation for the City's O&M expenses.

**Table 3-18** shows the allocation of the City's assets to each cost component. The resulting total asset allocation is derived in a similar manner as the O&M expenses allocation. First, RFC functionalized the City's assets and then allocated the assets to the cost causation components resulting in the total asset allocation shown in **Table 3-19**. It should be noted that the recycled water expenses to avoid the even larger expenses for the expansion of the ocean outfall and therefore allocated entirely to wastewater flow.

**Table 3-16: Wastewater O&M Expenses Percentage Allocation**

	Flow	BOD	TSS	Customer	General	Total
<b>Wastewater Operations</b>						
Employee Services	54%	18%	18%	0%	9%	<b>100%</b>
Maintenance & Operations	47%	18%	18%	1%	16%	<b>100%</b>
Capital Outlay	40%	38%	15%	0%	7%	<b>100%</b>
Internal Service	0%	0%	0%	9%	91%	<b>100%</b>
Allocations	0%	0%	0%	75%	25%	<b>100%</b>
<b>Environmental Program</b>						
Employee Services	100%	0%	0%	0%	0%	<b>100%</b>
Maintenance & Operations	100%	0%	0%	0%	0%	<b>100%</b>
Capital Outlay	100%	0%	0%	0%	0%	<b>100%</b>
Internal Service	100%	0%	0%	0%	0%	<b>100%</b>
Allocations	100%	0%	0%	0%	0%	<b>100%</b>

**Table 3-17: Wastewater O&M Expenses Allocation to Cost Causation Components**

	Flow	BOD	TSS	Customer	General	Total
<b>Wastewater Operations</b>						
Employee Services	\$5,332,139	\$1,808,181	\$1,808,181	\$0	\$871,964	\$9,820,465
Maintenance & Operations	\$3,213,233	\$1,237,741	\$1,237,741	\$69,965	\$1,115,670	\$6,874,350
Capital Outlay	\$207,250	\$195,375	\$75,375	\$0	\$35,500	\$513,500
Internal Service	\$0	\$0	\$0	\$123,185	\$1,251,540	\$1,374,725
Allocations	\$0	\$0	\$0	\$977,800	\$327,735	\$1,305,535
<b>Environmental Program</b>						
Employee Services	\$1,096,120	\$0	\$0	\$0	\$0	\$1,096,120
Maintenance & Operations	\$493,085	\$0	\$0	\$0	\$0	\$493,085
Capital Outlay	\$100,000	\$0	\$0	\$0	\$0	\$100,000
Internal Service	\$51,580	\$0	\$0	\$0	\$0	\$51,580
Allocations	(\$14,150)	\$0	\$0	\$0	\$0	(\$14,150)
<b>Total O&amp;M Expenses</b>	<b>\$10,479,257</b>	<b>\$3,241,297</b>	<b>\$3,121,297</b>	<b>\$1,170,950</b>	<b>\$3,602,409</b>	<b>\$21,615,210</b>
Percent Allocation	48%	15%	14%	5%	17%	100%

**Table 3-18: Wastewater Capital Assets Percentage Allocation**

	Flow	BOD	TSS	Customer	General	Total
<b>Asset Class</b>						
Plant	50%	25%	25%			<b>100%</b>
Pump Station	100%					<b>100%</b>
Land					100%	<b>100%</b>
Other					100%	<b>100%</b>
Equipment	50%	25%	25%			<b>100%</b>
Recycled Water	100%					<b>100%</b>
Sewer Pipeline	100%					<b>100%</b>
Sewer Outfall	100%					<b>100%</b>
Infrastructure Pipelines	100%					<b>100%</b>

**Table 3-19: Wastewater Capital Assets Allocation to Cost Causation Components**

	Flow	BOD	TSS	Customer	General	Total
<b>Asset Class</b>						
Plant	\$68,853,414	\$34,426,707	\$34,426,707	\$0	\$0	\$137,706,827
Pump Station	\$10,442,411	\$0	\$0	\$0	\$0	\$10,442,411
Land	\$0	\$0	\$0	\$0	\$1,358,842	\$1,358,842
Other	\$0	\$0	\$0	\$0	\$2,287,043	\$2,287,043
Equipment	\$2,356,405	\$1,178,202	\$1,178,202	\$0	\$0	\$4,712,810
Recycled Water	\$40,655,461	\$0	\$0	\$0	\$0	\$40,655,461
Sewer Pipeline	\$43,479,014	\$0	\$0	\$0	\$0	\$43,479,014
Sewer Outfall	\$68,703,828	\$0	\$0	\$0	\$0	\$68,703,828
Infrastructure Pipelines	\$34,770,693	\$0	\$0	\$0	\$0	\$34,770,693
<b>Total Assets</b>	<b>\$269,261,224</b>	<b>\$35,604,909</b>	<b>\$35,604,909</b>	<b>\$0</b>	<b>\$3,645,885</b>	<b>\$344,116,928</b>
Percent Allocation	78%	10%	10%	0%	1%	100%

### *Revenue Requirement Determination*

Table 3-20 shows the revenue requirement derivation with the total revenue required from rates. The totals shown in the “Operating” and “Capital” columns are the total O&M and capital revenue requirements, respectively, that are allocated to the cost causation components using the allocation percentages shown in Table 3-17 and Table 3-19.

RFC calculated the revenue requirement using FY 2017 expenses, which include O&M expenses, rate funded capital expenses, and existing and proposed debt service. To arrive at the rate revenue requirement, we subtract other revenue from other expenses and make adjustments for annual cash balances and to annualize rate increases. The negative adjustments are subtracted and therefore added as a result of subtracting a negative number. The total revenue requirement is the amount that fixed charges and flow charges are designed to collect.



**Table 3-20: Wastewater Revenue Requirement Determination**

	Operating	FY 2017 Capital	Total
<b>1 Revenue Requirements</b>			
2 Wastewater Operations Expenses	\$19,888,575		\$19,888,575
3 Environmental Program Expenses	\$1,726,635		\$1,726,635
4 Existing Debt Service		\$4,189,686	\$4,189,686
5 Proposed Debt Service		\$0	\$0
6 Rate Funded CIP		\$34,299,926	\$34,299,926
<b>7 Subtotal</b>	<b>\$21,615,210</b>	<b>\$38,489,612</b>	<b>\$60,104,822</b>
<b>8 Other Revenue</b>			
9 Other Operating Revenue	\$4,059,564		\$4,059,564
10 Interest Income	\$108,006		\$108,006
<b>11 Subtotal</b>	<b>\$4,167,570</b>	<b>\$0</b>	<b>\$4,167,570</b>
<b>12 Adjustments</b>			
13 Adjustments to Annualize Rate Increase	(\$955,855)		(\$955,855)
14 Adjustments for Annual Cash Balance		\$29,390,542	\$29,390,542
<b>15 Subtotal</b>	<b>(\$955,855)</b>	<b>\$29,390,542</b>	<b>\$28,434,687</b>
<b>16 Revenue to be Recovered from Rates</b>	<b>\$18,403,495</b>	<b>\$9,099,070</b>	<b>\$27,502,565</b>

### *Unit Cost Component Derivation*

Our end goal is to proportionately distribute the cost causation components to each customer class. To do so, we must calculate the cost causation component unit costs, which begins by assessing the total service units of each class for each cost causation component. This process is shown in **Table 3-21**.

**Table 3-21: Service Units for Customer Classes**

1 Customer Class	Flow	BOD	TSS	Number of Accounts or Equivalent
	Average WW Flow (kgal)	Average per class (mg/L)	Total Loading (lbs)	
2 Single Family Residential	1,560,038	250	3,254,786	25,221
3 Multi-Family Residential	899,973	250	1,877,660	17,519
4 Mobile Home	100,073	250	208,787	2,513
5 Car Wash/Soft Water Service	17,200	20	2,871	13
6 Hotel/Motel w/o Dining	25,673	310	66,417	20
7 Hotel/Motel w/ Dining	0	500	0	0
8 Repair Shop/Service Station	32,623	180	49,006	162
9 Commercial Laundry	0	450	0	0
10 Laundromat	33,332	150	41,725	24
11 Hospital	22,750	250	47,465	8
12 Grocery Store w/ Meat Dept.	29,475	800	196,785	32
13 Industrial	21,848	800	145,864	88
14 Restaurant	131,456	1000	1,097,057	263
15 All Other Commercial	277,810	300	695,530	1,424
16 High School	41,527	130	45,053	9,481
17 Elementary/Middle School	62,596	130	67,911	21,437
18 Church	20,075	130	21,779	275
19 Brewery	0	453	0	0
20 <b>Total</b>	<b>3,276,448</b>		<b>7,818,695</b>	<b>78,480</b>

Table 3-22 shows the cost causation component unit cost derivation. The operating revenue requirement is allocated to the cost causation components using the O&M allocations. Similarly, the capital revenue requirement is allocated to the cost causation components using the capital asset allocations. General and administrative costs, which cannot be tied to a specific function, are redistributed in proportion to the resulting allocation of the other cost causation components.

**Table 3-22: Wastewater Unit Cost Calculation**

	Flow	BOD	TSS	Customer	General	Total
1 Operating Expenses	\$8,922,187	\$2,759,686	\$2,657,517	\$996,963	\$3,067,142	<b>\$18,403,495</b>
2 Capital Expenses	\$7,119,751	\$941,458	\$941,458	\$0	\$96,404	<b>\$9,099,070</b>
3 <b>Subtotal</b>	<b>\$16,041,938</b>	<b>\$3,701,144</b>	<b>\$3,598,974</b>	<b>\$996,963</b>	<b>\$3,163,545</b>	<b>\$27,502,565</b>
4 Allocation of General Costs	\$2,174,161	\$501,615	\$487,768	\$0	(\$3,163,545)	\$0
5 <b>Total Adjusted COS</b>	<b>\$18,216,100</b>	<b>\$4,202,760</b>	<b>\$4,086,743</b>	<b>\$996,963</b>	<b>\$0</b>	<b>\$27,502,565</b>
6 Units of Service	3,276,448	7,818,695	8,017,750	47,287		
7 Units of Measure	kgal	lb	lb	accounts/mo		
8 <b>Average Unit Cost of Service</b>	<b>\$5.56</b>	<b>\$0.54</b>	<b>\$0.51</b>	<b>\$1.76</b>		
9	\$/kgal	\$/lb	\$/lb	\$/account/mo		
10 <b>Brine Line Unit Cost Calculation</b>						
11 Total Outfall Cost	\$2,173,854					
12 Total Influent Less RW Usage	3,164,563					
13 Unit Cost	\$0.69					

### *Allocation of Costs to Customer Classes*

The final step in a COS analysis is to distribute the cost causation components to the user classes using the unit costs derived in **Table 3-22** to arrive at the cost to serve each customer class. **Table 3-23** shows the derivation of the cost to serve (i.e., cost of service for) each customer class. The column titled total shows the total costs to each customer class.

The unit rate shown in the table represents the sum of the revenue requirements from Flow, BOD and SS spread on the total flow. Customer costs would be passed on as fixed charges. The current fixed charge revenues represent 46 percent of the total rate revenue. The proposed fixed charge retains the current fixed charge percentage of 46 percent of total rate revenue. Therefore, the “Variable Rate” column in **Table 3-23** is calculated by subtracting the total fixed revenue (number of customer bills per year multiplied by the proposed fixed charge) from the total cost to serve each customer class in the “Total” column divided by total flow for that customer class. This represents the rate per kgal of wastewater to be charged to each customer class.

**Table 3-23: Allocation of Wastewater Costs to Customer Classes**

	Flow	BOD	TSS	Customer	Total	Unit Rates	Variable Rate
<b>1 Single Family Residential</b>							
2 Units	1,560,038	3,254,786	3,580,265	25,221			
3 Costs	\$8,673,356	\$1,749,535	\$1,824,904	\$531,741	\$12,779,536	\$7.85	\$4.14
<b>4 Multi-Family Residential</b>							
5 Units	899,973	1,877,660	2,065,426	17,519			
6 Costs	\$5,003,589	\$1,009,293	\$1,052,772	\$369,357	\$7,435,011	\$7.85	\$3.38
<b>7 Mobile Home</b>							
8 Units	100,073	208,787	229,666	2,513			
9 Costs	\$556,377	\$112,229	\$117,064	\$52,982	\$838,651	\$7.85	\$2.08
<b>10 Car Wash/Soft Water Service</b>							
11 Units	17,200	2,871	21,531	13			
12 Costs	\$95,627	\$1,543	\$10,975	\$274	\$108,419	\$6.29	\$6.11
<b>13 Hotel/Motel w/o Dining</b>							
14 Units	25,673	66,417	25,710	20			
15 Costs	\$142,732	\$35,701	\$13,105	\$422	\$191,959	\$7.46	\$7.28
<b>16 Repair Shop/Service Station</b>							
17 Units	32,623	49,006	76,231	162			
18 Costs	\$181,376	\$26,342	\$38,856	\$3,415	\$249,989	\$7.56	\$6.42
<b>19 Laundromat</b>							
20 Units	33,332	41,725	30,598	24			
21 Costs	\$185,313	\$22,428	\$15,596	\$506	\$223,844	\$6.70	\$6.54
<b>22 Hospital</b>							
23 Units	22,750	47,465	18,986	8			
24 Costs	\$126,485	\$25,514	\$9,677	\$169	\$161,844	\$7.11	\$7.03
<b>25 Grocery Store w/ Meat Dept.</b>							
26 Units	29,475	196,785	196,785	32			
27 Costs	\$163,872	\$105,777	\$100,303	\$675	\$370,628	\$12.55	\$12.30
<b>28 Industrial</b>							
29 Units	21,848	145,864	72,932	88			
30 Costs	\$121,469	\$78,406	\$37,174	\$1,855	\$238,904	\$10.85	\$9.92
<b>31 Restaurant</b>							
32 Units	131,456	1,097,057	658,234	263			
33 Costs	\$730,860	\$589,698	\$335,510	\$5,545	\$1,661,612	\$12.60	\$12.14
<b>34 All Other Commercial</b>							
35 Units	277,810	695,530	927,373	1,424			
36 Costs	\$1,544,541	\$373,866	\$472,693	\$30,023	\$2,421,122	\$8.61	\$7.43
<b>37 High School</b>							
38 Units	41,527	45,053	38,121	9,481			
39 Costs	\$230,877	\$24,217	\$19,431	\$0	\$274,525	\$28.96	
<b>40 Elementary/Middle School</b>							
41 Units	62,596	67,911	57,463	21,437			
42 Costs	\$348,016	\$36,504	\$29,289	\$0	\$413,809	\$19.30	
<b>43 Church</b>							
44 Units	20,075	21,779	18,429	275			
45 Costs	\$111,611	\$11,707	\$9,393	\$0	\$132,712	\$40.22	

### 3.5 RATE DERIVATION

Utilizing the variable rates calculated in the previous section, the flow charge component can be calculated. **Table 3-24** shows the fixed and variable rate components for all customer classes.

**Table 3-24: Wastewater Rate Derivation**

	Customer Class	Unit	Fixed \$/mo	Other \$/unit	Flow \$/kgal	BOD \$/lb	TSS \$/lb
1	Single Family Residential	unit/mo	\$20.91		\$4.14		
2	Multi-Family Residential	unit/mo	\$20.91		\$3.38		
3	Mobile Home	unit/mo	\$20.91		\$2.08		
4	Car Wash/Soft Water Service	unit/mo	\$20.91		\$6.12		
5	Hotel/Motel w/o Dining	unit/mo	\$20.91		\$7.29		
6	Hotel/Motel w/ Dining	unit/mo	\$20.91		\$10.55		
7	Repair Shop/Service Station	unit/mo	\$20.91		\$6.42		
8	Commercial Laundry	unit/mo	\$20.91		\$7.44		
9	Laundromat	unit/mo	\$20.91		\$6.54		
10	Hospital	unit/mo	\$20.91		\$7.03		
11	Grocery Store w/ Meat Dept.	unit/mo	\$20.91		\$12.31		
12	Industrial	unit/mo	\$20.91		\$9.93		
13	Restaurant	unit/mo	\$20.91		\$12.14		
14	All Other Commercial	unit/mo	\$20.91		\$7.43		
15	High School	students/yr		\$28.96			
16	Elementary/Middle School	students/yr		\$19.31			
17	Church	100 seats/mo		\$40.22			
18	Brewery	unit/mo			\$5.56	\$0.54	\$0.51
19	Discharge to Brine Line	unit/mo			\$0.69		

The final rate derivation for all customer classes is calculated by multiplying the variable charges (in \$/kgal of **wastewater flow**) with the corresponding return factor for each customer class to express the rate in \$per kgal of **water use**. The return factors used in the Study are shown in **Table 3-25**. The proposed rates for all customer classes in FY 2017 is detailed in **Table 3-26**.

**Table 3-25: Wastewater Return Factors**

Customer Class	Return Factor
1 Single Family Residential	80%
2 Multi-Family Residential	95%
3 Mobile Home	100%
4 Car Wash/Soft Water Service	90%
5 Hotel/Motel w/o Dining	90%
6 Hotel/Motel w/ Dining	90%
7 Repair Shop/Service Station	75%
8 Commercial Laundry	90%
9 Laundromat	90%
10 Hospital	90%
11 Grocery Store w/ Meat Dept.	90%
12 Industrial	50%
13 Restaurant	90%
14 All Other Commercial	90%

**Table 3-26: Proposed Wastewater Rates for FY 2017**

Customer Class	Unit	FY 2017	
		Fixed	WW Flow
Single Family Residential	unit/mo	\$20.91	\$4.14
Multi-Family Residential	unit/mo	\$20.91	\$3.38
Mobile Home	unit/mo	\$20.91	\$2.08
Car Wash/Soft Water Service	unit/mo	\$20.91	\$6.12
Hotel/Motel w/o Dining	unit/mo	\$20.91	\$7.29
Hotel/Motel w/ Dining	unit/mo	\$20.91	\$10.55
Repair Shop/Service Station	unit/mo	\$20.91	\$6.42
Commercial Laundry	unit/mo	\$20.91	\$7.44
Laundromat	unit/mo	\$20.91	\$6.54
Hospital	unit/mo	\$20.91	\$7.03
Grocery Store w/ Meat Dept.	unit/mo	\$20.91	\$12.31
Industrial	unit/mo	\$20.91	\$9.93
Restaurant	unit/mo	\$20.91	\$12.14
All Other Commercial	unit/mo	\$20.91	\$7.43
High School	students/yr	\$28.96	
Elementary/Middle School	students/yr	\$19.31	
Church	100 seats/mo	\$40.22	
Brewery			
Flow	\$/kgal		\$5.56
BOD	\$/lb		\$0.54
TSS	\$/lb		\$0.51
Discharge to Brine Line	unit/mo		\$0.69
Recycled Water	\$/kgal		\$3.85

Table 3-27 shows the proposed wastewater rates for the next five years, starting in March of each year.

**Table 3-27: Proposed Five-Year Wastewater Rates Schedule**

Customer Class	Unit	FY 2017		FY 2018	
		Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$20.91	\$4.14	\$22.07	\$4.37
Multi-Family Residential	unit/mo	\$20.91	\$3.38	\$22.07	\$3.57
Mobile Home	unit/mo	\$20.91	\$2.08	\$22.07	\$2.20
Car Wash/Soft Water Service	unit/mo	\$20.91	\$6.12	\$22.07	\$6.46
Hotel/Motel w/o Dining	unit/mo	\$20.91	\$7.29	\$22.07	\$7.70
Hotel/Motel w/ Dining	unit/mo	\$20.91	\$10.55	\$22.07	\$11.14
Repair Shop/Service Station	unit/mo	\$20.91	\$6.42	\$22.07	\$6.78
Commercial Laundry	unit/mo	\$20.91	\$7.44	\$22.07	\$7.85
Laundromat	unit/mo	\$20.91	\$6.54	\$22.07	\$6.90
Hospital	unit/mo	\$20.91	\$7.03	\$22.07	\$7.42
Grocery Store w/ Meat Dept.	unit/mo	\$20.91	\$12.31	\$22.07	\$12.99
Industrial	unit/mo	\$20.91	\$9.93	\$22.07	\$10.48
Restaurant	unit/mo	\$20.91	\$12.14	\$22.07	\$12.81
All Other Commercial	unit/mo	\$20.91	\$7.43	\$22.07	\$7.84
High School	students/yr	\$28.96		\$30.56	
Elementary/Middle School	students/yr	\$19.31		\$20.38	
Church	100 seats/mo	\$40.22		\$42.44	
Brewery					
Flow	\$/kgal		\$5.56		\$5.87
BOD	\$/lb		\$0.54		\$0.57
TSS	\$/lb		\$0.51		\$0.54
Discharge to Brine Line	unit/mo		\$0.69		\$0.73
Recycled Water	\$/kgal		\$3.85		\$3.85

Customer Class	Unit	FY 2019		FY 2020		FY 2021	
		Fixed	WW Flow	Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$23.29	\$4.62	\$24.58	\$4.88	\$25.94	\$5.15
Multi-Family Residential	unit/mo	\$23.29	\$3.77	\$24.58	\$3.98	\$25.94	\$4.20
Mobile Home	unit/mo	\$23.29	\$2.33	\$24.58	\$2.46	\$25.94	\$2.60
Car Wash/Soft Water Service	unit/mo	\$23.29	\$6.82	\$24.58	\$7.20	\$25.94	\$7.60
Hotel/Motel w/o Dining	unit/mo	\$23.29	\$8.13	\$24.58	\$8.58	\$25.94	\$9.06
Hotel/Motel w/ Dining	unit/mo	\$23.29	\$11.76	\$24.58	\$12.41	\$25.94	\$13.10
Repair Shop/Service Station	unit/mo	\$23.29	\$7.16	\$24.58	\$7.56	\$25.94	\$7.98
Commercial Laundry	unit/mo	\$23.29	\$8.29	\$24.58	\$8.75	\$25.94	\$9.24
Laundromat	unit/mo	\$23.29	\$7.28	\$24.58	\$7.69	\$25.94	\$8.12
Hospital	unit/mo	\$23.29	\$7.83	\$24.58	\$8.27	\$25.94	\$8.73
Grocery Store w/ Meat Dept.	unit/mo	\$23.29	\$13.71	\$24.58	\$14.47	\$25.94	\$15.27
Industrial	unit/mo	\$23.29	\$11.06	\$24.58	\$11.67	\$25.94	\$12.32
Restaurant	unit/mo	\$23.29	\$13.52	\$24.58	\$14.27	\$25.94	\$15.06
All Other Commercial	unit/mo	\$23.29	\$8.28	\$24.58	\$8.74	\$25.94	\$9.23
High School	students/yr	\$32.25		\$34.03		\$35.91	
Elementary/Middle School	students/yr	\$21.51		\$22.70		\$23.95	
Church	100 seats/mo	\$44.78		\$47.25		\$49.85	
Brewery							
Flow	\$/kgal		\$6.20		\$6.55		\$6.92
BOD	\$/lb		\$0.61		\$0.65		\$0.69
TSS	\$/lb		\$0.57		\$0.61		\$0.65
Discharge to Brine Line	unit/mo		\$0.78		\$0.83		\$0.88
Recycled Water	\$/kgal		\$3.85		\$3.85		\$3.85

In order to reduce customer impacts, the City proposed to phase in the wastewater rates over the next five years. **Table 3-28** shows the phase-in wastewater rates schedule, as determined by the City.



**Table 3-28: Phase-In Wastewater Rates Schedule**

Customer Class	Unit	FY 2017		FY 2018	
		Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$20.91	\$4.08	\$22.07	\$4.35
Multi-Family Residential	unit/mo	\$20.91	\$3.37	\$22.07	\$3.57
Mobile Home	unit/mo	\$20.91	\$2.08	\$22.07	\$2.19
Car Wash/Soft Water Service	unit/mo	\$20.91	\$6.12	\$22.07	\$6.46
Hotel/Motel w/o Dining	unit/mo	\$20.91	\$7.29	\$22.07	\$7.69
Hotel/Motel w/ Dining	unit/mo	\$20.91	\$10.55	\$22.07	\$11.13
Repair Shop/Service Station	unit/mo	\$20.91	\$6.42	\$22.07	\$6.77
Commercial Laundry	unit/mo	\$20.91	\$7.44	\$22.07	\$7.85
Laundromat	unit/mo	\$20.91	\$6.54	\$22.07	\$6.90
Hospital	unit/mo	\$20.91	\$7.03	\$22.07	\$7.42
Grocery Store w/ Meat Dept.	unit/mo	\$20.91	\$11.95	\$22.07	\$12.80
Industrial	unit/mo	\$20.91	\$9.83	\$22.07	\$10.43
Restaurant	unit/mo	\$20.91	\$11.78	\$22.07	\$12.63
All Other Commercial	unit/mo	\$20.91	\$7.43	\$22.07	\$7.84
High School	students/yr	\$28.96		\$30.55	
Elementary/Middle School	students/yr	\$19.31		\$20.37	
Church	100 seats/mo	\$40.22		\$42.43	
Brewery					
Flow	\$/kgal		\$5.56		\$5.87
BOD	\$/lb		\$0.54		\$0.56
TSS	\$/lb		\$0.51		\$0.51
Discharge to Brine Line	unit/mo		\$0.69		\$0.72
Recycled Water	\$/kgal		\$3.85		\$3.85

Customer Class	Unit	FY 2019		FY 2020		FY 2021	
		Fixed	WW Flow	Fixed	WW Flow	Fixed	WW Flow
Single Family Residential	unit/mo	\$23.29	\$4.61	\$24.58	\$4.86	\$25.94	\$5.13
Multi-Family Residential	unit/mo	\$23.29	\$3.76	\$24.58	\$3.97	\$25.94	\$4.19
Mobile Home	unit/mo	\$23.29	\$2.32	\$24.58	\$2.44	\$25.94	\$2.58
Car Wash/Soft Water Service	unit/mo	\$23.29	\$6.81	\$24.58	\$7.19	\$25.94	\$7.58
Hotel/Motel w/o Dining	unit/mo	\$23.29	\$8.11	\$24.58	\$8.56	\$25.94	\$9.03
Hotel/Motel w/ Dining	unit/mo	\$23.29	\$11.74	\$24.58	\$12.39	\$25.94	\$13.07
Repair Shop/Service Station	unit/mo	\$23.29	\$7.15	\$24.58	\$7.54	\$25.94	\$7.95
Commercial Laundry	unit/mo	\$23.29	\$8.28	\$24.58	\$8.74	\$25.94	\$9.22
Laundromat	unit/mo	\$23.29	\$7.28	\$24.58	\$7.68	\$25.94	\$8.10
Hospital	unit/mo	\$23.29	\$7.82	\$24.58	\$8.25	\$25.94	\$8.71
Grocery Store w/ Meat Dept.	unit/mo	\$23.29	\$13.69	\$24.58	\$14.44	\$25.94	\$15.24
Industrial	unit/mo	\$23.29	\$11.05	\$24.58	\$11.66	\$25.94	\$12.30
Restaurant	unit/mo	\$23.29	\$13.51	\$24.58	\$14.26	\$25.94	\$15.04
All Other Commercial	unit/mo	\$23.29	\$8.27	\$24.58	\$8.72	\$25.94	\$9.20
High School	students/yr	\$32.23		\$34.01		\$35.88	
Elementary/Middle School	students/yr	\$21.49		\$22.67		\$23.92	
Church	100 seats/mo	\$44.77		\$47.23		\$49.83	
Brewery							
Flow	\$/kgal		\$6.19		\$6.53		\$6.89
BOD	\$/lb		\$0.60		\$0.63		\$0.67
TSS	\$/lb		\$0.57		\$0.60		\$0.63
Discharge to Brine Line	unit/mo		\$0.76		\$0.81		\$0.85
Recycled Water	\$/kgal		\$3.85		\$3.85		\$3.85

## APPENDIX A

**Table 2-23: Water O&M Expenses Percentage Allocation**

Departments	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
<b>Water - Dept. 410</b>									
Employee Services	15.2%	13.4%	14.3%	0.0%	27.5%	0.0%	7.6%	21.9%	100%
Maintenance & Operations	16.8%	3.6%	0.3%	56.5%	8.7%	0.1%	0.5%	13.5%	100%
Capital Outlay	50.4%	44.4%	5.3%	0.0%	0.0%	0.0%	0.0%	0.0%	100%
Internal Service	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	99.6%	100%
Allocations	0.3%	0.3%	0.2%	0.0%	0.2%	0.0%	0.0%	99.0%	100%
<b>Canal - Dept. 412</b>									
Employee Services								100%	100%
Maintenance & Operations								100%	100%
Capital Outlay								100%	100%
Internal Service								100%	100%
Allocations								100%	100%
<b>Lakes - Dept. 414</b>									
Employee Services								100%	100%
Maintenance & Operations								100%	100%
Capital Outlay								100%	100%
Internal Service								100%	100%
Allocations								100%	100%

**Table 2-24: Total Water O&M Expenses Allocation by Cost Causation Component**

Departments	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
<b>Water - Dept. 410</b>									
Employee Services	\$1,179,018	\$1,037,907	\$1,108,462	\$0	\$2,128,061	\$0	\$588,288	\$1,697,014	\$7,738,750
Maintenance & Operations	\$5,156,374	\$1,120,251	\$91,510	\$17,379,550	\$2,672,682	\$25,249	\$166,959	\$4,169,810	\$30,782,385
Capital Outlay	\$518,401	\$456,356	\$54,063	\$0	\$0	\$0	\$0	\$0	\$1,028,820
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$5,735	\$1,272,195	\$1,277,930
Allocations	\$19,239	\$16,936	\$13,481	\$0	\$13,266	\$85	\$385	\$6,181,722	\$6,245,115
<b>Canal - Dept. 412</b>									
Employee Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$536,640	\$536,640
Maintenance & Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$182,740	\$182,740
Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,000	\$24,000
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$126,945	\$126,945
Allocations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$18,165	\$18,165
<b>Lakes - Dept. 414</b>									
Employee Services	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$1,783,505	\$1,783,505
Maintenance & Operations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$561,800	\$561,800
Capital Outlay	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$24,000	\$24,000
Internal Service	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$418,780	\$418,780
Allocations	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$3,780	\$3,780
<b>Total O&amp;M Expenses</b>	<b>\$6,873,032</b>	<b>\$2,631,451</b>	<b>\$1,267,516</b>	<b>\$17,379,550</b>	<b>\$4,814,009</b>	<b>\$25,334</b>	<b>\$761,367</b>	<b>\$17,001,096</b>	<b>\$50,753,355</b>
Percent Allocation	14%	5%	2%	34%	9%	0%	2%	33%	100%

**Table 2-25: Water Capital Assets Percentage Allocation**

Asset Categories	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
Plant					100%				100%
Dams, Reservoirs, Lakes	53%	47%							100%
Pump Stations	53%	47%							100%
Water Pipeline	35%	31%	33%						100%
Infrastructure Pipelines	35%	31%	33%						100%
Land	43%	37%						20%	100%
Equipment						10%	45%	45%	100%
Other								100%	100%
Canal								100%	100%
Power Plants								100%	100%

**Table 2-26: Total Water Capital Assets Allocation by Cost Causation Component**

Asset Categories	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Total
Plant	\$0	\$0	\$0	\$0	\$48,751,826	\$0	\$0	\$0	\$48,751,826
Dams, Reservoirs, Lakes	\$16,720,627	\$14,719,419	\$0	\$0	\$0	\$0	\$0	\$0	\$31,440,046
Pump Stations	\$509,461	\$448,487	\$0	\$0	\$0	\$0	\$0	\$0	\$957,948
Water Pipeline	\$42,601,698	\$37,502,914	\$40,052,306	\$0	\$0	\$0	\$0	\$0	\$120,156,918
Infrastructure Pipelines	\$10,091,915	\$8,884,065	\$9,487,990	\$0	\$0	\$0	\$0	\$0	\$28,463,970
Land	\$776,065	\$683,182	\$0	\$0	\$0	\$0	\$0	\$364,812	\$1,824,059
Equipment	\$0	\$0	\$0	\$0	\$0	\$314,096	\$1,413,431	\$1,413,431	\$3,140,957
Other	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$2,604,686	\$2,604,686
Canal	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$622,846	\$622,846
Power Plants	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$19,090,628	\$19,090,628
<b>Total Assets</b>	<b>\$70,699,766</b>	<b>\$62,238,066</b>	<b>\$49,540,296</b>	<b>\$0</b>	<b>\$48,751,826</b>	<b>\$314,096</b>	<b>\$1,413,431</b>	<b>\$24,096,402</b>	<b>\$257,053,883</b>
Percent Allocation	28%	24%	19%	0%	19%	0%	1%	9%	100%

**Table 2-28: Derivation of Water Cost Causation Component Units**

Customer Class	Annual Usage (kgal)	Daily Usage (kgal/day)	Max Day			Max Hour			Equivalent Meters	Number of Bills
			Capacity Factor	Capacity (kgal/day)	Capacity (kgal/day)	Capacity Factor	Capacity (kgal/day)	Capacity (kgal/day)		
1 Single Family Residential	<b>2,580,950</b>									
2 Tier 1	1,380,373	3,782	1.09	4,113	331	1.63	6,169	2,387		
3 Tier 2	680,969	1,866	1.55	2,891	1,025	2.32	4,336	2,470		
4 Tier 3	519,609	1,424	2.12	3,013	1,589	3.17	4,519	3,095		
5 Residential/Agricultural	<b>25,284</b>									
6 Tier 1	4,924	13	1.02	14	0	1.53	21	7		
7 Tier 2	20,361	56	1.64	92	36	2.47	138	82		
8 Multi-Family Residential	<b>1,255,438</b>									
9 Tier 1	877,748	2,405	1.05	2,533	128	1.58	3,800	1,395		
10 Tier 2	156,552	429	1.39	595	166	2.08	892	463		
11 Tier 3	221,138	606	1.82	1,103	497	2.73	1,654	1,048		
12 Commercial/Industrial/School	772,338	2,116	1.28	2,707	591	1.92	4,060	1,944		
13 Irrigation/Institutional	383,790	1,051	1.49	1,568	517	2.24	2,353	1,301		
14 Landscape Districts	14,898	41	2.64	108	67	3.96	162	121		
15 SD Zoo Safari Park	135,860	372	1.61	598	226	2.41	897	525		
16 Special Unfiltered	243,522	667	1.61	1,072	405	2.41	1,608	941		
17 Agricultural Use	925,622	2,536	1.45	3,679	1,143	2.18	5,519	2,983		
18 <b>Total</b>	<b>6,337,703</b>	<b>17,364</b>		<b>24,085</b>	<b>6,721</b>		<b>36,127</b>	<b>18,764</b>	<b>36,176</b>	<b>314,700</b>

City of Escondido  
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**Table 2-29: Water Revenue Offsets Percentage Allocation**

Revenue Offset Allocation	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offsets	Total
Federal Grants	28%	24%	19%	0%	19%	0%	1%	9%		100%
Concessions - Lake Dixon									100%	100%
Fishing - Lake Dixon									100%	100%
Camping - Lake Dixon									100%	100%
Entry Fees - Lake Dixon									100%	100%
Boat Rentals - Lake Dixon									100%	100%
State Fishing Licenses									100%	100%
Fishing - Lake Wohlford									100%	100%
Boat Rentals - Lake Wohlford									100%	100%
Reimb from Outside Agencies	14%	5%	2%	34%	9%	0%	2%	33%		100%
Meter Installation						100%				100%
Penalties (Late Fee)									100%	100%
Water Connection Fees	28%	24%	19%	0%	19%	0%	1%	9%		100%
VID Rincon Filtration Charge	14%	5%	2%	34%	9%	0%	2%	33%		100%
Water Line Develop Reimb	28%	24%	19%	0%	19%	0%	1%	9%		100%
VID - Canal Reimbursement	28%	24%	19%	0%	19%	0%	1%	9%		100%
Electrical Energy	100%									100%
Electrical Energy - Indian Aff	100%									100%
Temporaty Meter Installations						100%				100%
CIP Reimbursement	28%	24%	19%	0%	19%	0%	1%	9%		100%
Pension Expense-GASB 68								100%		100%
Other Interest-Non Investment									100%	100%
Contributions									100%	100%
Developer Contributions	28%	24%	19%	0%	19%	0%	1%	9%		100%
Interest-Trustee									100%	100%
Investment Earnings									100%	100%
Rent									100%	100%
Bank Acct Analysis Fees-Contra							100%			100%
Cr. Card Merchant Fees-Contra							100%			100%
Cr Card Clearing-Dixon Lake							100%			100%
Damages - City Property									100%	100%
Misc Over / Short									100%	100%
Bad Debt Recoveries									100%	100%
Invest-Unrealized Gain or Loss									100%	100%
Gain/Loss Disp of Fixed Assets	28%	24%	19%	0%	19%	0%	1%	9%		100%
Bad Debt Offset - Contra Acct									100%	100%
Prior Period Exp/Rev									100%	100%
Other Revenue									100%	100%
Clearing Account									100%	100%
Transfers In								100%		100%
Transfers Out								100%		100%
Placeholder								100%		100%
Placeholder								100%		100%
Placeholder								100%		100%
<b>Total Revenue Offset Allocation</b>	<b>\$519,209</b>	<b>\$303,470</b>	<b>\$220,372</b>	<b>\$445,161</b>	<b>\$308,221</b>	<b>\$51,840</b>	<b>\$24,863</b>	<b>\$519,664</b>	<b>\$2,129,400</b>	<b>\$4,522,200</b>

**Table 2-30: Water Unit Cost Calculation**

	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offsets	Total
1 Operating Expenses	\$6,822,818	\$2,612,226	\$1,258,256	\$17,252,577	\$4,778,839	\$25,149	\$755,804	\$16,876,888	\$0	\$50,382,557
2 Capital Expenses	\$2,036,423	\$1,792,694	\$1,426,949	\$0	\$1,404,238	\$9,047	\$40,712	\$694,068	\$0	\$7,404,132
3 Revenue Offsets	(\$519,209)	(\$303,470)	(\$220,372)	(\$445,161)	(\$308,221)	(\$51,840)	(\$24,863)	(\$519,664)	(\$2,129,400)	(\$4,522,200)
4 <b>Total Cost of Service</b>	<b>\$8,340,032</b>	<b>\$4,101,449</b>	<b>\$2,464,834</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>(\$17,644)</b>	<b>\$771,654</b>	<b>\$17,051,292</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>
5 Allocation of General Cost	\$9,080,803	\$4,465,745	\$2,683,763			(\$19,211)	\$840,193	(\$17,051,292)		\$0
6 Allocation of Base Cost	\$0					\$0				\$0
7 Allocation of Peaking Cost to Meter		(\$7,710,475)	(\$4,633,737)			\$12,344,212				\$0
8 <b>Total Adjusted Cost of Service</b>	<b>\$17,420,835</b>	<b>\$856,719</b>	<b>\$514,860</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>\$12,307,356</b>	<b>\$1,611,846</b>	<b>\$0</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>
9 Unit of Service	6,337,703	6,721	18,764	6,337,703	5,168,559	434,108	314,700		2,263,044	
10	kgal	kgal/day	kgal/day	kgal	kgal	equiv. meters/yr	bills/yr		kgal	
11 Unit Cost	\$2.75	\$127.46	\$27.44	\$2.65	\$1.14	\$28.35	\$5.12		(\$0.94)	
12	kgal	kgal/day	kgal/day	kgal	kgal	equiv. meter/mo	bills/mo		kgal	

**Table 2-31: Allocation of Water Costs to Customer Classes**

Customer Class	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Revenue Offset	Total
1 Single Family Residential										
2 Tier 1	\$3,930,074	\$42,180	\$65,505	\$3,660,711	\$1,569,004				(\$1,298,855)	\$7,968,620
3 Tier 2	\$1,938,793	\$130,658	\$67,786	\$1,805,911	\$774,025					\$4,717,174
4 Tier 3	\$1,479,383	\$202,546	\$84,934	\$1,377,988	\$590,614					\$3,735,467
5 Residential/Agricultural										
6 Tier 1	\$14,018	\$37	\$197	\$13,057	\$5,596				(\$4,633)	\$28,273
7 Tier 2	\$57,969	\$4,579	\$2,244	\$53,996	\$23,143					\$141,931
8 Multi-Family Residential										
9 Tier 1	\$2,499,045	\$16,353	\$38,273	\$2,327,763	\$997,694				(\$825,912)	\$5,053,216
10 Tier 2	\$445,722	\$21,133	\$12,708	\$415,172	\$177,946					\$1,072,681
11 Tier 3	\$629,604	\$63,349	\$28,768	\$586,452	\$251,357					\$1,559,531
12 Commercial/Industrial/School	\$2,198,933	\$75,321	\$53,352	\$2,048,220	\$877,880					\$5,253,707
13 Irrigation/Institutional	\$1,092,694	\$65,893	\$35,703	\$1,017,802	\$436,236					\$2,648,327
14 Landscape Districts	\$42,417	\$8,549	\$3,320	\$39,510	\$16,934					\$110,731
15 SD Zoo Safari Park	\$386,807	\$28,786	\$14,402	\$360,296	\$154,425					\$944,716
16 Special Unfiltered	\$693,334	\$51,598	\$25,815	\$645,814	\$0					\$1,416,560
17 Agricultural Use	\$2,012,040	\$145,738	\$81,852	\$2,454,724	\$0					\$4,694,353
18 Meter						\$12,307,356	\$1,611,846			\$13,919,203
19 <b>Total</b>	<b>\$17,420,835</b>	<b>\$856,719</b>	<b>\$514,860</b>	<b>\$16,807,416</b>	<b>\$5,874,856</b>	<b>\$12,307,356</b>	<b>\$1,611,846</b>	<b>\$0</b>	<b>(\$2,129,400)</b>	<b>\$53,264,489</b>

**Table 2-38: Derivation of Proposed Commodity Rates**

Customer Class	Monthly Tier (kgal)	% Usage	% Bills	Usage (kgal)	Base Delivery	Supply	Peaking	Treatment (Base Only)	Revenue Offset	Total Rate
Single Family Residential										
Tier 1	7	53%	45%	1,380,373	\$2.85	\$2.85	\$0.21	\$0.60	(\$0.94)	\$5.57
Tier 2	15	26%	35%	680,969	\$2.85	\$2.85	\$1.09	\$0.60		\$7.39
Tier 3	15+	20%	20%	519,609	\$2.85	\$2.85	\$2.18	\$0.60		\$8.48
Residential/Agricultural										
Tier 1	7	19%	13%	4,924	\$2.85	\$2.85	\$0.08	\$0.60	(\$0.94)	\$5.44
Tier 2	7+	81%	87%	20,361	\$2.85	\$2.85	\$1.27	\$0.60		\$7.58
Multi-Family Residential										
Tier 1	5	70%	57%	877,748	\$2.85	\$2.85	\$0.14	\$0.60	(\$0.94)	\$5.50
Tier 2	7	12%	21%	156,552	\$2.85	\$2.85	\$0.78	\$0.60		\$7.08
Tier 3	7+	18%	21%	221,138	\$2.85	\$2.85	\$1.61	\$0.60		\$7.91
Commercial/Industrial/School				772,338	\$2.85	\$2.85	\$0.57	\$0.60		\$6.88
Irrigation/Institutional				383,790	\$2.85	\$2.85	\$0.98	\$0.60		\$7.28
Landscape Districts				14,898	\$2.85	\$2.85	\$3.19	\$0.60		\$9.49
SD Zoo Safari Park				135,860	\$2.85	\$2.85	\$1.20	\$0.60		\$7.50
Special Unfiltered				243,522	\$2.85	\$2.85	\$0.32	\$0.00		\$6.02
Agricultural Use				925,622	\$2.17	\$1.52	\$0.25	\$0.00		\$3.94
Total				6,337,703	\$17,420,835	\$16,807,416	\$4,122,035	\$3,124,400	(\$2,129,400)	\$39,374,608



City of Escondido  
Water and Wastewater Rate Study Report

# APPENDIX B

**Table B-1: Allocation of Water O&M Expenses to Cost Causation Components**

Water - Dept. 410 Employee Services	FY 2017 Budget	Percent Allocation								Amount Allocation							
		Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General
<b>5001-555-410 REGULAR FULL-TIME</b>																	
Director of Utilities	\$172,920								100%								\$172,920
Administrative Aide	\$32,650								100%								\$32,650
Administrative Assistant	\$41,740								100%								\$41,740
Control System Technician III	\$178,385								100%								\$178,385
Cross Connection Tech I/II's	\$126,430								100%								\$126,430
Department Assistants (1 to 440)	\$83,310								100%								\$83,310
Deputy Director/Water	\$135,440								100%								\$135,440
Field Engineering Inspector II	\$68,400								100%								\$68,400
Laboratory Technician II	\$70,065								100%								\$70,065
Management Analyst II	\$61,955								100%								\$61,955
Meter Reader Supervisor	\$77,340							100%								\$77,340	
Plant System Technician	\$66,815					100%								\$66,815			
Sr. Water Distribution Supervisors	\$259,990	35%	31%	33%						\$92,180	\$81,147	\$86,663					
Sr. Water Distribution Technicians	\$563,310	35%	31%	33%						\$199,722	\$175,818	\$187,770					
Utilities Analyst	\$57,260							50%	50%							\$28,630	\$28,630
Water Distribution Superintendent	\$104,040	35%	31%	33%						\$36,887	\$32,473	\$34,680					
Water Distribution Technician I/II's	\$1,048,810	35%	31%	33%						\$371,856	\$327,351	\$349,603					
Water Service Representatives	\$117,335							100%								\$117,335	
Water Treatment Plant Operations Superintend	\$125,145					100%								\$125,145			
Water Treatment Plant Operations Supervisor	\$99,180					100%								\$99,180			
Water Treatment Plant Operator In Training, II's	\$514,300					100%								\$514,300			
Sr. Water Treatment Plant Operators	\$385,420					100%								\$385,420			
Sr. Plant Systems Technician	\$73,765					100%								\$73,765			
		\$700,645	\$616,788	\$658,717	\$0	\$1,264,625	\$0	\$223,305	\$999,925								
Shift Differential	\$19,380	16%	14%	15%		28%		5%	22%	\$3,042	\$2,678	\$2,860		\$5,490		\$969	\$4,341
Bilingual Pay	\$16,250	16%	14%	15%		28%		5%	22%	\$2,551	\$2,245	\$2,398		\$4,604		\$813	\$3,640
Confined Space Team	\$36,200	16%	14%	15%		28%		5%	22%	\$5,682	\$5,002	\$5,342		\$10,255		\$1,811	\$8,109
Certification Pay	\$18,000	16%	14%	15%		28%		5%	22%	\$2,825	\$2,487	\$2,656		\$5,099		\$900	\$4,032
Vacation-Holiday Payoff	\$17,000	16%	14%	15%		28%		5%	22%	\$2,668	\$2,349	\$2,509		\$4,816		\$850	\$3,808
Retirement Contingency	\$30,705	16%	14%	15%		28%		5%	22%	\$4,819	\$4,242	\$4,531		\$8,699		\$1,536	\$6,878
Budget Adjustment - MOU Agreement (07-02, I	\$0	16%	14%	15%		28%		5%	22%	\$0	\$0	\$0		\$0		\$0	\$0
<b>5002-555-410 CONTRACT/GRANT FUNDED</b>																	
Water Meter Readers	\$211,855							100%								\$211,855	
<b>5004-555-410 TEMPORARY PART-TIME</b>																	
Department Specialist	\$14,335								100%								\$14,335
<b>5020-555-410 OVERTIME</b>																	
Comp Time Contingency	\$8,000	16%	14%	15%		28%		5%	22%	\$1,256	\$1,105	\$1,180		\$2,266		\$400	\$1,792
Emergency Overtime	\$135,000	16%	14%	15%		28%		5%	22%	\$21,189	\$18,653	\$19,921		\$38,245		\$6,753	\$30,240
Holiday Pay	\$23,760	16%	14%	15%		28%		5%	22%	\$3,729	\$3,283	\$3,506		\$6,731		\$1,189	\$5,322
Stand-By	\$36,400	16%	14%	15%		28%		5%	22%	\$5,713	\$5,029	\$5,371		\$10,312		\$1,821	\$8,154
<b>5025-555-410 EMPLOYEE OVERHEAD</b>																	
Other Employee Overhead	\$165,845	16%	14%	15%		28%		5%	22%	\$26,030	\$22,915	\$24,472		\$46,983		\$8,296	\$37,149
Budget Adjustment - MOU Agreement (07-02, I	\$0	16%	14%	15%		28%		5%	22%	\$0	\$0	\$0		\$0		\$0	\$0
<b>5026-555-410 PERS</b>																	
PERS	\$1,475,195	16%	14%	15%		28%		5%	22%	\$231,538	\$203,827	\$217,682		\$417,914		\$73,794	\$330,440
Budget Adjustment - MOU Agreement (07-02, I	\$0	16%	14%	15%		28%		5%	22%	\$0	\$0	\$0		\$0		\$0	\$0
<b>5027-555-410 MEDICAL</b>																	
Medical	\$610,320	16%	14%	15%		28%		5%	22%	\$95,792	\$84,327	\$90,060		\$172,900		\$30,530	\$136,710
<b>5028-555-410 WORKERS' COMPENSATION</b>																	
Workers' Compensation	\$379,880	16%	14%	15%		28%		5%	22%	\$59,624	\$52,488	\$56,056		\$107,618		\$19,003	\$85,092
Budget Adjustment - MOU Agreement (07-02, I	\$0	16%	14%	15%		28%		5%	22%	\$0	\$0	\$0		\$0		\$0	\$0
<b>5030-555-410 FLEXIBLE BENEFITS</b>																	
Flexible Benefits	\$52,435	16%	14%	15%		28%		5%	22%	\$8,230	\$7,245	\$7,737		\$14,855		\$2,623	\$11,745
Budget Adjustment - MOU Agreement (07-02, I	\$0	16%	14%	15%		28%		5%	22%	\$0	\$0	\$0		\$0		\$0	\$0
<b>Total Employee Services</b>	<b>\$7,714,565</b>	<b>15.24%</b>	<b>13.41%</b>	<b>14.32%</b>	<b>0.00%</b>	<b>27.50%</b>	<b>0.00%</b>	<b>7.60%</b>	<b>21.93%</b>	<b>\$1,175,333</b>	<b>\$1,034,663</b>	<b>\$1,104,998</b>	<b>\$0</b>	<b>\$2,121,410</b>	<b>\$0</b>	<b>\$586,449</b>	<b>\$1,691,711</b>

# City of Escondido

## Water and Wastewater Rate Study Report

Water - Dept. 410	FY 2017	Percent Allocation								Amount Allocation							
	Budget	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General
Maintenance & Operations																	
5101-555-410 OFFICE/OPERATING SUPPLIES																	
LPG for Water Treatment Plant	\$38,800	53%	47%							\$20,635	\$18,165						
Miscellaneous Parts & Supplies	\$800,500								100%								\$800,500
Office Supplies	\$23,000								100%								\$23,000
Safety Items	\$25,000								100%								\$25,000
Small Tools and Equipment	\$25,000								100%								\$25,000
T-Shirts	\$2,200								100%								\$2,200
Uniforms	\$25,000								100%								\$25,000
Water Treatment Plant	\$100,000					100%								\$100,000			
5104-555-410 PURCHASED WATER																	
Purchased Water	\$15,959,416				100%								\$15,959,416				
MWD Capacity Charge	\$412,996	53%	47%							\$219,642	\$193,354						
CWA Supply Reliability Charge	\$909,239	100%								\$909,239							
CWA Customer Service Charge	\$1,102,552	53%	47%							\$586,366	\$516,186						
CWA Storage Charge	\$2,528,722	100%								\$2,528,722							
MWD Readiness-to-Serve Charge	\$973,831																
CWA Infrastructure Access Charge	\$1,113,244																
5106-555-410 CHEMICALS																	
Water Treatment Chemicals	\$2,000,000					100%								\$2,000,000			
5107-555-410 MINOR TOOLS & EQUIPMENT																	
Chainsaw, Weed Whip, Blower (5N)	\$0								100%								\$0
Chop Saws (2N)	\$0								100%								\$0
Colorimeters (5N)	\$2,700								100%								\$2,700
Dechlor Diffuser Zde-Chlorinator (10N)	\$11,500	100%								\$11,500							
Dickson Pressure Recorders (10R)	\$0								100%								\$0
SC300 Hand Held Meter Reading Units (3R)	\$0						100%								\$0		
Shoenstadt Locators (2R)	\$0								100%								\$0
Turbidimeters (5N)	\$6,600								100%								\$6,600
Wackers (2R)	\$0								100%								\$0
Water Treatment Cameras (2R)	\$5,000					100%								\$5,000			
5126-555-410 MAINTENANCE OF EQUIPMENT																	
Bear Valley Power Plant Maintenance	\$15,000								100%								\$15,000
Cleaning/Inspection Equipment	\$2,000								100%								\$2,000
Distributions System SCADA	\$10,000	35%	31%	33%						\$3,546	\$3,121	\$3,333					
Dixon Rec., Utility, Washwater, WTP Motor & Pi	\$125,000	100%								\$125,000							
Flow Meters (4R)	\$16,000						100%								\$16,000		
Laboratory and Office Equipment	\$1,800								100%								\$1,800
Meter Reading Equipment	\$3,000							100%								\$3,000	
Model 4040 Flocculator Drive	\$10,000	100%								\$10,000							
Office Equipment Maintenance Contracts	\$1,500								100%								\$1,500
Power Plant Maintenance	\$10,000								100%								\$10,000
Process Instrumentation	\$15,000	100%								\$15,000							
Spare Parts-PLC 5/60-WTP	\$5,000								100%								\$5,000
Treatment Plant Instrumentation	\$50,000					100%								\$50,000			
5128-555-410 MAJOR MAINTENANCE																	
Basin Valves (3R)	\$6,000	53%	47%							\$3,191	\$2,809						
Distribution System RTU's and SCADA Radios	\$56,000	35%	31%	33%						\$19,855	\$17,479	\$18,667					
Dixon Suction Line Repair	\$0	53%	47%							\$0	\$0						
Filter Valves (3)	\$40,000	53%	47%							\$21,273	\$18,727						
Pump #3 Rebuild, Valve Repl +CV at Park Hill	\$68,000	53%	47%							\$36,164	\$31,836						
Pump Station Equipment	\$45,000	53%	47%							\$23,932	\$21,068						
Tower Gate Ram	\$40,000	53%	47%							\$21,273	\$18,727						
Divers - Dixon Bouy Line	\$40,000	53%	47%							\$21,273	\$18,727						
Valve Operators and Gear Boxes (4R)	\$160,000	53%	47%							\$85,092	\$74,908						

# City of Escondido

## Water and Wastewater Rate Study Report

Water - Dept. 410	FY 2017 Budget	Percent Allocation								Amount Allocation							
		Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General
<b>5131-555-410    PROFESSIONAL SERVICES/CONTRACTS</b>																	
Chemical Spill Clean-up Contingency	\$20,000								100%								\$20,000
Chlorine System Maintenance	\$12,000					100%								\$12,000			
Consultants Fees	\$115,000								100%								\$115,000
Contract Labor	\$60,000								100%								\$60,000
Control Systems Maintenance	\$100,000								100%								\$100,000
Customer Service/Emergency Assistance	\$15,000							100%								\$15,000	
Distribution Reservoir Landscape Maintenance	\$29,000								100%								\$29,000
Electrical Contractors	\$75,000								100%								\$75,000
Instrument Calibration & Certification	\$40,000								100%								\$40,000
Lake Divers - Quagga Mussel Control/Inspectic	\$35,000								100%								\$35,000
Legal Services	\$215,000								100%								\$215,000
On-site Training	\$20,000								100%								\$20,000
Reservoir Maintenance/Cleaning	\$18,000	53%	47%							\$9,573	\$8,427						
Site Maintenance	\$20,000								100%								\$20,000
State Lobbyist	\$30,000								100%								\$30,000
Underground Service Alert	\$2,885								100%								\$2,885
WTP Landscaping/Janitorial	\$28,000								100%								\$28,000
Water Conservation Program	\$39,000							100%								\$39,000	
Water Operations Janitorial	\$2,000								100%								\$2,000
<b>5160-555-410    TRAINING AND MEETINGS</b>																	
Seminars, Conferences, Workshops	\$32,250								100%								\$32,250
<b>5161-555-410    MILEAGE REIMBURSEMENT</b>																	
Miscellaneous	\$600								100%								\$600
<b>5162-555-410    DUES AND SUBSCRIPTIONS</b>																	
ACWA	\$17,000								100%								\$17,000
AWWA Partnership for Safe Water	\$800								100%								\$800
American Public Works Association	\$250								100%								\$250
American Water Works Association	\$2,600								100%								\$2,600
American Water Works Research Foundation	\$12,000								100%								\$12,000
California Water Awareness	\$1,300								100%								\$1,300
Foundation for Cross Connection Control	\$1,300								100%								\$1,300
Professional Association Dues	\$900								100%								\$900
San Diego County Utility Managers	\$150								100%								\$150
Southern California Water Committee	\$750								100%								\$750
Technical Publications	\$1,050								100%								\$1,050
Water Conservation Publications	\$520							100%								\$520	
<b>5163-555-410    AUTO ALLOWANCE</b>																	
Director of Utilities	\$5,100								100%								\$5,100
<b>5167-555-410    ADVERTISING AND PRINTING</b>																	
Annual Water Quality Report	\$25,000							100%								\$25,000	
Conservation Program Materials	\$6,500							100%								\$6,500	
Prop 218 Notification	\$5,000							100%								\$5,000	
School Tours - WTP	\$2,000								100%								\$2,000
<b>5170-555-410    UTILITIES</b>																	
Distribution Pump Station Electrical	\$184,800	35%	31%	33%						\$65,521	\$57,679	\$61,600					
Local Raw Water Lift (Esc)	\$40,795				100%								\$40,795				
Local Raw Water Lift (VID)	\$81,585				100%								\$81,585				
Treatment Plant Operation	\$293,000					100%								\$293,000			
Washwater and Dixon Rec. Lift	\$76,650	53%	47%							\$40,764	\$35,886						
<b>5171-555-410    WATER</b>																	
City Water Expenses	\$1,500,000								100%								\$1,500,000
<b>5173-555-410    OTHER TELEPHONE</b>																	
Cellular Phones	\$22,400								100%								\$22,400
<b>5180-555-410    RENT</b>																	
Facility Lease	\$323,765								100%								\$323,765
Loader/Misc	\$3,000								100%								\$3,000
<b>5190-555-410    OTHER EXPENSE</b>																	
FERC Fees	\$110								100%								\$110
Miscellaneous Supplies	\$4,200								100%								\$4,200
NPDES Cat III	\$2,000								100%								\$2,000
NPDES Dist	\$5,000								100%								\$5,000
OT Allowance	\$6,500								100%								\$6,500
Real Estate Taxes	\$116,960								100%								\$116,960
S.D. County Hazardous Materials Regulation Fe	\$2,420								100%								\$2,420
State Dam Permits (Wohlford, Dixon)	\$25,300				100%								\$25,300				
State DHS Fee	\$14,300								100%								\$14,300
SWRCH Hydrostatic Discharge Permit	\$1,500								100%								\$1,500
WTP Operator and Distribution Operator Cert.	\$3,630	35%	31%	33%						\$1,287	\$1,133	\$1,210					

# City of Escondido

## Water and Wastewater Rate Study Report

Water - Dept. 410	FY 2017 Budget	Percent Allocation								Amount Allocation							
		Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General
<b>5193-555-410 SOFTWARE</b>																	
Adobe Acrobat - Professional (1N)	\$1,000								100%								\$1,000
AMMS - MicroWest (WTP)	\$2,000					100%								\$2,000			
ARC/INFO	\$1,500								100%								\$1,500
ArcView	\$1,000								100%								\$1,000
AutoCad Lite	\$1,000								100%								\$1,000
Computer Licensing	\$9,625								100%								\$9,625
Hydraulic Modeling (Innovyze)	\$2,250								100%								\$2,250
Iron Maintenance/Support	\$7,400						100%								\$7,400		
Rockwell Software Support	\$2,500								100%								\$2,500
Utility Billing Software	\$60,715							100%								\$60,715	
VPM	\$1,500								100%								\$1,500
WIMS Reporting Software	\$10,000								100%								\$10,000
Wonderware Support - WTP	\$15,000					100%								\$15,000			
XC2 Software Support (for CCC)	\$950								100%								\$950
Budget Adjustment - Funding for UB Software (	\$0								100%								\$0
<b>5194-555-410 MINOR OFFICE EQUIPMENT</b>																	
Desktop Computers (1N)	\$1,800								100%								\$1,800
Laptop Computers (5N)	\$13,500								100%								\$13,500
Monitor (1N)	\$500								100%								\$500
<b>Total Maintenance &amp; Operations</b>	<b>\$30,615,710</b>	<b>16.75%</b>	<b>3.64%</b>	<b>0.30%</b>	<b>56.46%</b>	<b>8.68%</b>	<b>0.08%</b>	<b>0.54%</b>	<b>13.55%</b>	<b>\$4,778,847</b>	<b>\$1,038,231</b>	<b>\$84,810</b>	<b>\$16,107,096</b>	<b>\$2,477,000</b>	<b>\$23,400</b>	<b>\$154,735</b>	<b>\$3,864,515</b>
<b>Capital Outlay</b>																	
<b>5209-555-410 OTHER CAPITAL OUTLAY</b>																	
10 Wheeler (1N)	\$150,000	53%	47%							\$79,774	\$70,226						
Backhoe (1N)	\$145,000	53%	47%							\$77,115	\$67,885						
Backhoe Breaker w/WR Coupler	\$0	53%	47%							\$0	\$0						
Backhoe Trailer (2N)	\$40,000	53%	47%							\$21,273	\$18,727						
Bench Meter Tester (1R)	\$0	53%	47%							\$0	\$0						
Chemical Feed Pumps (2R)	\$28,000	53%	47%							\$14,891	\$13,109						
Compaction Wheel, Backhoe	\$0	53%	47%							\$0	\$0						
Hydro Excavator	\$0	53%	47%							\$0	\$0						
Renovation of PRV Station	\$30,000	53%	47%							\$15,955	\$14,045						
Shoring Shield High Pipe Clearance (2N)	\$23,500	53%	47%							\$12,498	\$11,002						
Trenchless Piercing Tool (Mole) (1R)	\$6,600	53%	47%							\$3,510	\$3,090						
Utility Carts (2R)	\$25,000	53%	47%							\$13,296	\$11,704						
Walk Behind Asphalt Cutting Machine (1R)	\$25,000	53%	47%							\$13,296	\$11,704						
WTP / Distribution Trucks (2N)	\$90,000	35%	31%	33%						\$31,910	\$28,090	\$30,000					
Water Line Locator (1R)	\$7,800	53%	47%							\$4,148	\$3,652						
<b>Total Capital Outlay</b>	<b>\$570,900</b>	<b>50.4%</b>	<b>44.4%</b>	<b>5.3%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>\$287,665</b>	<b>\$253,235</b>	<b>\$30,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
<b>Internal Service</b>																	
<b>5125-555-410 BUILDING MAINTENANCE</b>																	
Building Maintenance	\$174,905								100%								\$174,905
<b>5164-555-410 FLEET SERVICES</b>																	
Fleet Services	\$513,130								100%								\$513,130
<b>5165-555-410 DUPLICATING</b>																	
Duplicating	\$5,205								100%								\$5,205
<b>5172-555-410 TELECOMMUNICATIONS</b>																	
Telecommunications	\$32,125								100%								\$32,125
<b>5174-555-410 RADIO COMMUNICATIONS</b>																	
Radio Communications	\$10,525								100%								\$10,525
<b>5175-555-410 MAIL SERVICES</b>																	
Mail Services	\$5,735							100%								\$5,735	
<b>5178-555-410 OFFICE AUTOMATION</b>																	
Office Automation	\$75,675								100%								\$75,675
<b>5183-555-410 INSURANCE</b>																	
General Liability Insurance	\$348,885								100%								\$348,885
Property Insurance	\$111,745								100%								\$111,745
<b>Total Internal Service</b>	<b>\$1,277,930</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.0%</b>	<b>0.4%</b>	<b>99.6%</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$5,735</b>	<b>\$1,272,195</b>

City of Escondido  
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Water - Dept. 410 Allocations	FY 2017 Budget	Percent Allocation								Amount Allocation							
		Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General	Base	Max Day	Max Hour	Supply	Treatment	Meters	Customer	General
5901-555-410    ALLOCATED IN																	
City Council	\$97,505								100%								\$97,505
City Manager	\$301,425								100%								\$301,425
Video Services	\$7,755								100%								\$7,755
City Attorney	\$381,580								100%								\$381,580
City Clerk	\$232,820								100%								\$232,820
City Treasurer	\$60,480								100%								\$60,480
Finance	\$998,145								100%								\$998,145
Human Resources	\$205,835								100%								\$205,835
Risk Management	\$46,760								100%								\$46,760
Information Systems- Admin	\$22,810								100%								\$22,810
Information Systems- Data Proc	\$285,995								100%								\$285,995
GIS	\$65,715								100%								\$65,715
Planning	\$100,735								100%								\$100,735
Code Enforcement	\$79,970								100%								\$79,970
Building	\$114,330								100%								\$114,330
Engineering	\$137,700	28%	24%	19%	0%	19%	0%	1%	9%	\$37,873	\$33,340	\$26,538		\$26,116	\$168	\$757	\$12,908
Maintenance-Streets	\$561,220								100%								\$561,220
Police	\$979,470								100%								\$979,470
Fire	\$679,890								100%								\$679,890
Wastewater	\$1,102,545								100%								\$1,102,545
Environmental Programs	\$93,580								100%								\$93,580
5902-555-410    ALLOCATED OUT																	
Canal	(\$16,560)								100%								(\$16,560)
Wastewater	(\$159,580)								100%								(\$159,580)
Recycled Water	(\$50,700)								100%								(\$50,700)
Environmental Programs	(\$16,560)								100%								(\$16,560)
Capital Improvement Projects	(\$67,750)	28%	24%	19%	0%	19%	0%	1%	9%	(\$18,634)	(\$16,404)	(\$13,057)		(\$12,849)	(\$83)	(\$373)	(\$6,351)
Total Allocations	\$6,245,115	0.3%	0.3%	0.2%	0.0%	0.2%	0.0%	0.0%	99.0%	\$19,239	\$16,936	\$13,481	\$0	\$13,266	\$85	\$385	\$6,181,722
Total	\$46,424,220	14.1%	5.3%	2.8%	36.3%	10.4%	0.1%	1.7%	29.3%	\$6,261,084	\$2,343,067	\$1,233,289	\$16,107,096	\$4,611,677	\$23,485	\$747,304	\$13,010,143

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**Table B-2: Allocation of Wastewater O&M Expenses to Cost Causation Components**

558-420 WASTEWATER Employee Services 5001-558-420 REGULAR FULL-TIME	FY 2017 Budget	Percent Allocation					Amount Allocation				
		Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
1 Asset Program Manager	\$76,450	50%	25%	25%		0%	\$38,225	\$19,113	\$19,113	\$0	\$0
3 Associate Chemists	\$234,290	50%	25%	25%		0%	\$117,145	\$58,573	\$58,573	\$0	\$0
1 Associate Engineer	\$83,435	50%	25%	25%		0%	\$41,718	\$20,859	\$20,859	\$0	\$0
2 Control Systems Analysts	\$189,600	50%	25%	25%		0%	\$94,800	\$47,400	\$47,400	\$0	\$0
4 Control Systems Technician I, II & III's	\$295,805	50%	25%	25%		0%	\$147,903	\$73,951	\$73,951	\$0	\$0
1 Control Systems Technician Supervisor	\$105,825	50%	25%	25%		0%	\$52,913	\$26,456	\$26,456	\$0	\$0
1 Cross Connection Technician	\$50,675				100%		\$0	\$0	\$0	\$0	\$50,675
1 Department Assistant	\$38,490	50%	25%	25%		0%	\$19,245	\$9,623	\$9,623	\$0	\$0
1 Deputy Director of Utilities/Construction & Engineering	\$140,000	50%	25%	25%		0%	\$70,000	\$35,000	\$35,000	\$0	\$0
1 Deputy Director of Utilities/Wastewater	\$135,440				100%		\$0	\$0	\$0	\$0	\$135,440
1 Engineer I/II	\$77,975	50%	25%	25%		0%	\$38,988	\$19,494	\$19,494	\$0	\$0
1 Field Engineering Inspector	\$68,400	50%	25%	25%		0%	\$34,200	\$17,100	\$17,100	\$0	\$0
1 Laboratory Superintendent	\$105,930	50%	25%	25%		0%	\$52,965	\$26,483	\$26,483	\$0	\$0
5 Laboratory Technician I/II's	\$340,790	50%	25%	25%		0%	\$170,395	\$85,198	\$85,198	\$0	\$0
1 Maintenance and Operations Coordinator	\$48,440	50%	25%	25%		0%	\$24,220	\$12,110	\$12,110	\$0	\$0
1 Maintenance Technician I/II	\$47,100	50%	25%	25%		0%	\$23,550	\$11,775	\$11,775	\$0	\$0
4 Plant Systems Technician I/II's	\$279,360	50%	25%	25%		0%	\$139,680	\$69,840	\$69,840	\$0	\$0
1 Plant Systems Technician Supervisor	\$103,265	50%	25%	25%		0%	\$51,633	\$25,816	\$25,816	\$0	\$0
1 Sr. Engineer	\$96,500	50%	25%	25%		0%	\$48,250	\$24,125	\$24,125	\$0	\$0
1 Sr. Environmental Compliance Inspector	\$73,655	50%	25%	25%		0%	\$36,828	\$18,414	\$18,414	\$0	\$0
3 Sr. Plant Systems Technicians	\$271,370	50%	25%	25%		0%	\$135,685	\$67,843	\$67,843	\$0	\$0
3 Sr. Wastewater Collections Supervisors	\$281,745	100%				0%	\$281,745	\$0	\$0	\$0	\$0
2 Sr. Wastewater Collections Technicians	\$153,900	100%				0%	\$153,900	\$0	\$0	\$0	\$0
4 Sr. Wastewater Treatment Plant Operators	\$389,455	50%	25%	25%		0%	\$194,728	\$97,364	\$97,364	\$0	\$0
2 Supervising Chemists	\$198,000	50%	25%	25%		0%	\$99,000	\$49,500	\$49,500	\$0	\$0
1 Utilities Construction Project Manager	\$96,900				100%		\$0	\$0	\$0	\$0	\$96,900
1 Utilities Maintenance Superintendent	\$109,215				100%		\$0	\$0	\$0	\$0	\$109,215
1 Utilities Technician	\$63,515				100%		\$0	\$0	\$0	\$0	\$63,515
11 Wastewater Collections Technician I/II's	\$626,125	100%				0%	\$626,125	\$0	\$0	\$0	\$0
1 Wastewater Treatment Plant Operations Supervisor	\$116,625	50%	25%	25%		0%	\$58,313	\$29,156	\$29,156	\$0	\$0
12 Wastewater Treatment Plant Operator Trainee, I, II & III's	\$952,575	50%	25%	25%		0%	\$476,288	\$238,144	\$238,144	\$0	\$0
1 Wastewater Treatment Plant Superintendent	\$125,145	50%	25%	25%		0%	\$62,573	\$31,286	\$31,286	\$0	\$0
Bilingual Pay	\$20,150				100%		\$0	\$0	\$0	\$0	\$20,150
Shift Differential	\$33,700				100%		\$0	\$0	\$0	\$0	\$33,700
Vacation-Holiday Payoff	\$18,000				100%		\$0	\$0	\$0	\$0	\$18,000
Confined Space Team	\$12,000				100%		\$0	\$0	\$0	\$0	\$12,000
Budget Adjustment - MOU Agreement (07-02, 07-09, 07-10)	\$0				100%		\$0	\$0	\$0	\$0	\$0
		\$3,291,010	\$1,114,620	\$1,114,620	\$0	\$539,595					

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558-420 WASTEWATER	FY 2017 Budget	Percent Allocation					Amount Allocation				
		Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>5004-558-420 TEMPORARY PART-TIME</b>											
2 Laboratory Assistants	\$28,000	50%	25%	25%		0%	\$14,000	\$7,000	\$7,000	\$0	\$0
Temporary Part-Time	\$36,190	54%	18%	18%	0%	9%	\$19,654	\$6,657	\$6,657	\$0	\$3,223
<b>5020-558-420 OVERTIME</b>											
Comp Time Contingency	\$1,100	54%	18%	18%	0%	9%	\$597	\$202	\$202	\$0	\$98
Holiday Pay	\$24,000	54%	18%	18%	0%	9%	\$13,034	\$4,414	\$4,414	\$0	\$2,137
Hydroflushing	\$28,560	54%	18%	18%	0%	9%	\$15,511	\$5,253	\$5,253	\$0	\$2,543
Overtime (Includes Stand-By)	\$200,000	54%	18%	18%	0%	9%	\$108,617	\$36,787	\$36,787	\$0	\$17,809
<b>5025-558-420 OTHER EMPLOYEE OVERHEAD</b>											
Other Employee Overhead	\$199,140	54%	18%	18%	0%	9%	\$108,150	\$36,629	\$36,629	\$0	\$17,732
Budget Adjustment - MOU Agreement (07-02, 07-09, 07-10)	\$0	54%	18%	18%	0%	9%	\$0	\$0	\$0	\$0	\$0
<b>5026-558-420 PERS</b>											
PERS	\$1,868,335	54%	18%	18%	0%	9%	\$1,014,664	\$343,653	\$343,653	\$0	\$166,365
Budget Adjustment - MOU Agreement (07-02, 07-09, 07-10)	\$0	54%	18%	18%	0%	9%	\$0	\$0	\$0	\$0	\$0
<b>5027-558-420 MEDICAL</b>											
Medical	\$802,535	54%	18%	18%	0%	9%	\$435,845	\$147,615	\$147,615	\$0	\$71,461
<b>5028-558-420 WORKERS' COMPENSATION</b>											
Workers' Compensation	\$486,535	54%	18%	18%	0%	9%	\$264,230	\$89,491	\$89,491	\$0	\$43,323
Budget Adjustment - MOU Agreement (07-02, 07-09, 07-10)	\$0	54%	18%	18%	0%	9%	\$0	\$0	\$0	\$0	\$0
<b>5030-558-420 FLEXIBLE BENEFITS</b>											
Flexible Benefits	\$86,225	54%	18%	18%	0%	9%	\$46,827	\$15,860	\$15,860	\$0	\$7,678
Budget Adjustment - MOU Agreement (07-02, 07-09, 07-10)	\$0	54%	18%	18%	0%	9%	\$0	\$0	\$0	\$0	\$0
<b>Total Employee Services</b>	<b>\$9,820,465</b>	<b>54%</b>	<b>18%</b>	<b>18%</b>	<b>0%</b>	<b>9%</b>	<b>\$5,332,139</b>	<b>\$1,808,181</b>	<b>\$1,808,181</b>	<b>\$0</b>	<b>\$871,964</b>
	TRUE										
<b>Maintenance &amp; Operations</b>											
<b>5101-558-420 OFFICE/OPERATING SUPPLIES</b>											
Emergency Generator Fuel	\$10,000					100%	\$0	\$0	\$0	\$0	\$10,000
Laboratory Supplies	\$150,000	50%	25%	25%		0%	\$75,000	\$37,500	\$37,500	\$0	\$0
Lubricants	\$10,000					100%	\$0	\$0	\$0	\$0	\$10,000
Materials and Tools (Collection System)	\$70,000	100%				0%	\$70,000	\$0	\$0	\$0	\$0
Materials and Tools (Lab & Operations)	\$50,000	50%	25%	25%		0%	\$25,000	\$12,500	\$12,500	\$0	\$0
Materials and Tools (HARRF)	\$75,000					100%	\$0	\$0	\$0	\$0	\$75,000
Office Supplies	\$3,500					100%	\$0	\$0	\$0	\$0	\$3,500
Work Uniforms	\$25,000					100%	\$0	\$0	\$0	\$0	\$25,000
<b>5105-558-420 SAFETY EQUIPMENT</b>											
Safety Equipment	\$20,000					100%	\$0	\$0	\$0	\$0	\$20,000
<b>5106-558-420 CHEMICALS</b>											
Treatment Chemicals	\$625,000	50%	25%	25%		0%	\$312,500	\$156,250	\$156,250	\$0	\$0
<b>5107-558-420 MINOR TOOLS &amp; EQUIPMENT</b>											
DI Units	\$5,000	100%				0%	\$5,000	\$0	\$0	\$0	\$0
Doppler Flow Meters	\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
Environmental Compliance Supplies	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
HACH Instruments	\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
LED Advance Warning Trailer	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Prosoft Control Module	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Samplers	\$30,000	100%				0%	\$30,000	\$0	\$0	\$0	\$0
Sewer Hose	\$8,000	100%				0%	\$8,000	\$0	\$0	\$0	\$0
Spider 80 Chain Cutters	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0

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FY 2017 Budget	Percent Allocation					Amount Allocation				
	Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>558-420 WASTEWATER</b>										
<b>5126-558-420 MAINTENANCE OF EQUIPMENT</b>										
Centrifuge Major Maintenance		50%	50%		0%	\$0	\$50,000	\$50,000	\$0	\$0
Controls Upgrade for Lift Stations	100%				0%	\$50,000	\$0	\$0	\$0	\$0
HARRF Asphalt Sealing				100%		\$0	\$0	\$0	\$0	\$25,000
Laboratory Equipment	50%	25%	25%		0%	\$27,500	\$13,750	\$13,750	\$0	\$0
Lab Field Equip	50%	25%	25%		0%	\$12,500	\$6,250	\$6,250	\$0	\$0
Lift Station Parts	100%				0%	\$225,000	\$0	\$0	\$0	\$0
Lift Station Telemetry	100%				0%	\$15,000	\$0	\$0	\$0	\$0
Office Equipment					100%	\$0	\$0	\$0	\$0	\$25,000
Parts, Mach. Shop, Motor Repair, Tools					100%	\$0	\$0	\$0	\$0	\$155,000
Plant Control Upgrade				100%		\$0	\$0	\$0	\$0	\$50,000
Primary Line to Digester Cross/ cleanout repl				100%		\$0	\$0	\$0	\$0	\$50,000
Televising Equipment				100%		\$0	\$0	\$0	\$0	\$0
Treatment Plant Instrumentation	50%	25%	25%		0%	\$37,500	\$18,750	\$18,750	\$0	\$0
<b>5131-558-420 PROFESSIONAL SERVICES/CONTRACTS</b>										
Air Pollution Control Testing		50%	50%		0%	\$0	\$7,500	\$7,500	\$0	\$0
AMMS Service					100%	\$0	\$0	\$0	\$0	\$25,000
Biosolids Handling		50%	50%		0%	\$0	\$275,000	\$275,000	\$0	\$0
Collection System Monitoring	100%				0%	\$25,000	\$0	\$0	\$0	\$0
Consulting Services					100%	\$0	\$0	\$0	\$0	\$150,000
Contract Maintenance	100%				0%	\$300,000	\$0	\$0	\$0	\$0
Crane Certification					100%	\$0	\$0	\$0	\$0	\$5,000
Emergency Pumping Services	100%				0%	\$15,000	\$0	\$0	\$0	\$0
Lab AC/Heat & Instrumentation Service	50%	25%	25%		0%	\$25,000	\$12,500	\$12,500	\$0	\$0
Ocean Monitoring	50%	25%	25%		0%	\$15,000	\$7,500	\$7,500	\$0	\$0
Ocean Outfall Maintenance and Operation	100%				0%	\$330,000	\$0	\$0	\$0	\$0
Office Custodial					100%	\$0	\$0	\$0	\$0	\$60,000
Outside Laboratory Testing	50%	25%	25%		0%	\$136,000	\$68,000	\$68,000	\$0	\$0
Plant Grounds Maintenance	50%	25%	25%		0%	\$25,000	\$12,500	\$12,500	\$0	\$0
Turblex Maintenance					100%	\$0	\$0	\$0	\$0	\$50,000
Underground Service Alert	100%				0%	\$3,000	\$0	\$0	\$0	\$0
<b>5160-558-420 TRAINING AND MEETINGS</b>										
Seminars, Conferences, Workshops					100%	\$0	\$0	\$0	\$0	\$40,000
<b>5161-558-420 MILEAGE REIMBURSEMENT</b>										
Miscellaneous					100%	\$0	\$0	\$0	\$0	\$650
<b>5162-558-420 DUES AND SUBSCRIPTIONS</b>										
CWEA					100%	\$0	\$0	\$0	\$0	\$6,500
Dues and Subscriptions					100%	\$0	\$0	\$0	\$0	\$5,000
Water Environment Federation					100%	\$0	\$0	\$0	\$0	\$800
<b>5166-558-420 OUTSIDE DUPLICATING</b>										
Miscellaneous				100%	0%	\$0	\$0	\$0	\$1,250	\$0
<b>5167-558-420 ADVERTISING AND PRINTING</b>										
Prop 218 Notification				100%	0%	\$0	\$0	\$0	\$5,000	\$0
<b>5170-558-420 UTILITIES</b>										
Cathodic Protection Electrical	50%	25%	25%		0%	\$5,000	\$2,500	\$2,500	\$0	\$0
Lift Station Energy	100%				0%	\$276,750	\$0	\$0	\$0	\$0
Main Plant Electrical	50%	25%	25%		0%	\$768,000	\$384,000	\$384,000	\$0	\$0
Main Plant Natural Gas	50%	25%	25%		0%	\$112,500	\$56,250	\$56,250	\$0	\$0



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FY 2017 Budget	Percent Allocation					Amount Allocation				
	Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>558-420 WASTEWATER</b>										
<b>5171-558-420 WATER</b>										
City Water					100%	\$0	\$0	\$0	\$0	\$30,000
<b>5173-558-420 OTHER TELEPHONE</b>										
Cellular Phones					100%	\$0	\$0	\$0	\$0	\$25,000
<b>5180-558-420 RENT</b>										
Copier Lease				100%	0%	\$0	\$0	\$0	\$3,000	\$0
Equipment from Outside Vendors					100%	\$0	\$0	\$0	\$0	\$5,000
Facility Lease	50%	25%	25%		0%	\$161,883	\$80,941	\$80,941	\$0	\$0
Pager Rental					100%	\$0	\$0	\$0	\$0	\$5,000
<b>5190-558-420 OTHER EXPENSE</b>										
County Health Overflow Sampling Charges					100%	\$0	\$0	\$0	\$0	\$2,000
Damage Repair Contingency					100%	\$0	\$0	\$0	\$0	\$25,000
Driver's License Renewals (Class A & B)					100%	\$0	\$0	\$0	\$0	\$800
Hazardous Materials Disposal	50%	25%	25%		0%	\$3,000	\$1,500	\$1,500	\$0	\$0
Lab Accreditation Fee	50%	25%	25%		0%	\$4,000	\$2,000	\$2,000	\$0	\$0
NPDES Permit Fee	50%	25%	25%		0%	\$50,000	\$25,000	\$25,000	\$0	\$0
Operator Certification Renewals					100%	\$0	\$0	\$0	\$0	\$9,000
Pretreatment Program Surcharge	50%	25%	25%		0%	\$450	\$225	\$225	\$0	\$0
Real Estate Taxes					100%	\$0	\$0	\$0	\$0	\$11,220
SWRCB, Bay Protection Toxic Cleanup Program	50%	25%	25%		0%	\$5,500	\$2,750	\$2,750	\$0	\$0
San Diego County APCD Test Fees	50%	25%	25%		0%	\$7,500	\$3,750	\$3,750	\$0	\$0
San Diego County Hazardous Materials Reg.	50%	25%	25%		0%	\$1,650	\$825	\$825	\$0	\$0
Southern California Kelp Survey					100%	\$0	\$0	\$0	\$0	\$6,500
<b>5193-558-420 SOFTWARE</b>										
AMMS					100%	\$0	\$0	\$0	\$0	\$26,000
ARC/INFO					100%	\$0	\$0	\$0	\$0	\$1,500
Arc/View					100%	\$0	\$0	\$0	\$0	\$3,700
Auto Cad Support					100%	\$0	\$0	\$0	\$0	\$600
Camera Software					100%	\$0	\$0	\$0	\$0	\$0
CCTV Interface					100%	\$0	\$0	\$0	\$0	\$6,000
Cityworks® Asset Management Licensing					100%	\$0	\$0	\$0	\$0	\$60,000
Hach/Wimms					100%	\$0	\$0	\$0	\$0	\$6,400
Hydraulic Modeling (Innovyze)					100%	\$0	\$0	\$0	\$0	\$3,000
LIMMS Support					100%	\$0	\$0	\$0	\$0	\$16,000
Ops Sequel Support					100%	\$0	\$0	\$0	\$0	\$1,000
Rockwell Software Support					100%	\$0	\$0	\$0	\$0	\$2,500
Rockwell Software Upgrade					100%	\$0	\$0	\$0	\$0	\$2,000
Sewer Map					100%	\$0	\$0	\$0	\$0	\$1,000
Utility Billing Software				100%	0%	\$0	\$0	\$0	\$60,715	\$0
VPM					100%	\$0	\$0	\$0	\$0	\$1,500
Wonderware Support					100%	\$0	\$0	\$0	\$0	\$25,000
Budget Adjustment - Funding for UB Software (08-03)					100%	\$0	\$0	\$0	\$0	\$0
<b>5194-558-420 MINOR OFFICE EQUIPMENT</b>										
Computers (16R)					100%	\$0	\$0	\$0	\$0	\$30,000
HMI Field Units Upgrade					100%	\$0	\$0	\$0	\$0	\$0
Laptops (3R)					100%	\$0	\$0	\$0	\$0	\$10,500
Monitors (4R)					100%	\$0	\$0	\$0	\$0	\$8,000
<b>Total Maintenance &amp; Operations</b>	<b>47%</b>	<b>18%</b>	<b>18%</b>	<b>1%</b>	<b>16%</b>	<b>\$3,213,233</b>	<b>\$1,237,741</b>	<b>\$1,237,741</b>	<b>\$69,965</b>	<b>\$1,115,670</b>

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558-420 WASTEWATER	FY 2017 Budget	Percent Allocation					Amount Allocation				
		Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>Capital Outlay</b>											
<b>5209-558-420 OTHER CAPITAL OUTLAY</b>											
6' Muffin Monster	\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
10" Muffin Monster Blade Cartridge	\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
Camera Digital-Envirosight	\$0					100%	\$0	\$0	\$0	\$0	\$0
Composite Manholes	\$20,000	50%	25%	25%		0%	\$10,000	\$5,000	\$5,000	\$0	\$0
CST Truck	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
DeZurik Valves	\$15,000	100%				0%	\$15,000	\$0	\$0	\$0	\$0
DI Units	\$7,500	50%	25%	25%		0%	\$3,750	\$1,875	\$1,875	\$0	\$0
Force Main Repair Wells Cargo Trailer	\$8,000	100%				0%	\$8,000	\$0	\$0	\$0	\$0
Light Tower	\$10,500					100%	\$0	\$0	\$0	\$0	\$10,500
Moscad RTU (14)	\$50,000	100%				0%	\$50,000	\$0	\$0	\$0	\$0
Real Time Nitrification Control Instrumentation	\$120,000		100%			0%	\$0	\$120,000	\$0	\$0	\$0
Rotork Master Valve Station	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
SCADA Equipment	\$25,000					100%	\$0	\$0	\$0	\$0	\$25,000
Scott 5 Min Escape Bottles (6) & (4) air cart supply	\$8,500	100%				0%	\$8,500	\$0	\$0	\$0	\$0
Seepex Pumps (solids handling)	\$137,000		50%	50%		0%	\$0	\$68,500	\$68,500	\$0	\$0
Smart Cover Upgrade	\$0					100%	\$0	\$0	\$0	\$0	\$0
Sump/Trash Pumps (with assorted hose/lines)	\$12,000	100%				0%	\$12,000	\$0	\$0	\$0	\$0
Tow Behind Air Compressor	\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
Tractor Gannon (Coll)	\$5,000	100%				0%	\$5,000	\$0	\$0	\$0	\$0
Truck Mounted Accessories/Tools & Equip (Lab)	\$10,000	100%				0%	\$10,000	\$0	\$0	\$0	\$0
Warthog Nozzles	\$10,000	100%				0%	\$10,000	\$0	\$0	\$0	\$0
<b>Total Capital Outlay</b>	<b>\$513,500</b>	<b>40%</b>	<b>38%</b>	<b>15%</b>	<b>0%</b>	<b>7%</b>	<b>\$207,250</b>	<b>\$195,375</b>	<b>\$75,375</b>	<b>\$0</b>	<b>\$35,500</b>
	TRUE										
<b>Internal Service</b>											
<b>5125-558-420 BUILDING MAINTENANCE</b>											
Building Maintenance	\$160,675					100%	\$0	\$0	\$0	\$0	\$160,675
<b>5164-558-420 FLEET SERVICES</b>											
Fleet Services	\$589,185					100%	\$0	\$0	\$0	\$0	\$589,185
<b>5165-558-420 DUPLICATING</b>											
Duplicating	\$18,745				100%	0%	\$0	\$0	\$0	\$18,745	\$0
<b>5172-558-420 TELECOMMUNICATIONS</b>											
Telecommunications	\$37,895					100%	\$0	\$0	\$0	\$0	\$37,895
<b>5174-558-420 RADIO COMMUNICATIONS</b>											
Radio Communications	\$21,065					100%	\$0	\$0	\$0	\$0	\$21,065
<b>5175-558-420 MAIL SERVICES</b>											
Mail Services	\$1,350				100%	0%	\$0	\$0	\$0	\$1,350	\$0
<b>5178-558-420 OFFICE AUTOMATION</b>											
Office Automation	\$103,090				100%	0%	\$0	\$0	\$0	\$103,090	\$0
<b>5183-558-420 INSURANCE</b>											
General Liability Insurance	\$263,655					100%	\$0	\$0	\$0	\$0	\$263,655
Property Insurance	\$179,065					100%	\$0	\$0	\$0	\$0	\$179,065
<b>Total Internal Service</b>	<b>\$1,374,725</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>9%</b>	<b>91%</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$123,185</b>	<b>\$1,251,540</b>

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558-420 WASTEWATER Allocations	FY 2017 Budget	Percent Allocation					Amount Allocation				
		Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>5901-558-420 ALLOCATED IN</b>											
City Council	\$51,580					100%	\$0	\$0	\$0	\$0	\$51,580
City Manager	\$159,455					100%	\$0	\$0	\$0	\$0	\$159,455
Video Services	\$4,100					100%	\$0	\$0	\$0	\$0	\$4,100
City Attorney	\$296,785					100%	\$0	\$0	\$0	\$0	\$296,785
City Clerk	\$93,130					100%	\$0	\$0	\$0	\$0	\$93,130
City Treasurer	\$40,840					100%	\$0	\$0	\$0	\$0	\$40,840
Finance	\$836,020				100%	0%	\$0	\$0	\$0	\$836,020	\$0
Human Resources	\$205,835					100%	\$0	\$0	\$0	\$0	\$205,835
Risk Management	\$46,760					100%	\$0	\$0	\$0	\$0	\$46,760
Information Systems- Admin	\$19,210				100%	0%	\$0	\$0	\$0	\$19,210	\$0
Information Systems- Data Proc	\$122,570				100%	0%	\$0	\$0	\$0	\$122,570	\$0
GIS	\$65,715					100%	\$0	\$0	\$0	\$0	\$65,715
Planning	\$100,735					100%	\$0	\$0	\$0	\$0	\$100,735
Code Enforcement	\$141,890					100%	\$0	\$0	\$0	\$0	\$141,890
Building	\$114,330					100%	\$0	\$0	\$0	\$0	\$114,330
Engineering	\$119,330					100%	\$0	\$0	\$0	\$0	\$119,330
Maintenance-Streets	\$316,790					100%	\$0	\$0	\$0	\$0	\$316,790
Police	\$27,370					100%	\$0	\$0	\$0	\$0	\$27,370
Fire	\$18,810					100%	\$0	\$0	\$0	\$0	\$18,810
Successor Agency-Housing	\$12,150					100%	\$0	\$0	\$0	\$0	\$12,150
Environmental Programs	\$257,675					100%	\$0	\$0	\$0	\$0	\$257,675
Water	\$159,580					100%	\$0	\$0	\$0	\$0	\$159,580
<b>5902-558-420 ALLOCATED OUT</b>											
Water	(\$1,102,545)					100%	\$0	\$0	\$0	\$0	(\$1,102,545)
Recycled Water	(\$647,850)					100%	\$0	\$0	\$0	\$0	(\$647,850)
Environmental Programs	(\$18,230)					100%	\$0	\$0	\$0	\$0	(\$18,230)
Capital Improvement Projects	(\$136,500)					100%	\$0	\$0	\$0	\$0	(\$136,500)
<b>Total Allocations</b>	<b>\$1,305,535</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>75%</b>	<b>25%</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$977,800</b>	<b>\$327,735</b>

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		FY 2017	Percent Allocation					Amount Allocation				
558-420	WASTEWATER	Budget	Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
558-440	ENVIRONMENTAL PROGRAMS											
Employee Services												
5001-558-440	REGULAR FULL-TIME											
1 Assistant Environmental Programs Specialist (from 410)		\$50,995	100%				0%	\$50,995	\$0	\$0	\$0	\$0
4 Environmental Compliance Inspectors (from 420)		\$230,230	100%				0%	\$230,230	\$0	\$0	\$0	\$0
1 Environmental Compliance Supervisor (from 420)		\$79,870	100%				0%	\$79,870	\$0	\$0	\$0	\$0
1 Environmental Programs Manager/Utilities		\$105,320	100%				0%	\$105,320	\$0	\$0	\$0	\$0
2 Environmental Programs Specialists		\$140,460	100%				0%	\$140,460	\$0	\$0	\$0	\$0
1 Sr. Environmental Programs Specialist		\$76,400	100%				0%	\$76,400	\$0	\$0	\$0	\$0
Bilingual Pay		\$3,900	100%				0%	\$3,900	\$0	\$0	\$0	\$0
Budget Adjustment - MOU Agreement (07-09, 07-10)		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
5025-558-440	OTHER EMPLOYEE OVERHEAD											
Other Employee Overhead		\$23,410	100%				0%	\$23,410	\$0	\$0	\$0	\$0
Budget Adjustment - MOU Agreement (07-09, 07-10)		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
5026-558-440	PERS											
PERS		\$211,660	100%				0%	\$211,660	\$0	\$0	\$0	\$0
Budget Adjustment - MOU Agreement (07-09, 07-10)		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
5027-558-440	MEDICAL											
Medical		\$107,690	100%				0%	\$107,690	\$0	\$0	\$0	\$0
5028-558-440	WORKERS' COMPENSATION											
Workers' Compensation		\$42,820	100%				0%	\$42,820	\$0	\$0	\$0	\$0
Budget Adjustment - MOU Agreement (07-09, 07-10)		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
5030-558-440	FLEXIBLE BENEFITS											
Flexible Benefits		\$23,365	100%				0%	\$23,365	\$0	\$0	\$0	\$0
Budget Adjustment - MOU Agreement (07-09, 07-10)		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Total Employee Services		\$1,096,120	100%	0%	0%	0%	0%	\$1,096,120	\$0	\$0	\$0	\$0
		TRUE										
Maintenance & Operations												
5101-558-440	OFFICE/OPERATING SUPPLIES											
General Office Supplies		\$3,000	100%				0%	\$3,000	\$0	\$0	\$0	\$0
Stormwater Stenciling Supplies		\$1,000	100%				0%	\$1,000	\$0	\$0	\$0	\$0
5126-558-440	MAINTENANCE OF EQUIPMENT											
Monitoring and Sampling		\$200	100%				0%	\$200	\$0	\$0	\$0	\$0
Field Equipment		\$4,800	100%				0%	\$4,800	\$0	\$0	\$0	\$0
5131-558-440	PROFESSIONAL SERVICES/CONTRACTS											
Alternative Compliance Program		\$25,000	100%				0%	\$25,000	\$0	\$0	\$0	\$0
Carlsbad Dry Weather Monitoring		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Carlsbad Watershed Monitoring and Special Study		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Carlsbad WQIP Contract		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Carlsbad Watershed Management Area Compliance		\$130,000	100%				0%	\$130,000	\$0	\$0	\$0	\$0
Downstream Service Contract		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
MS4 Layer Maintenance		\$10,000	100%				0%	\$10,000	\$0	\$0	\$0	\$0
Municipal Separate Storm Sewer (MS4) Maintenance		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Regional Program Costs		\$54,000	100%				0%	\$54,000	\$0	\$0	\$0	\$0
San Dieguito Dry Weather Monitoring Program		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
San Dieguito Watershed Monitoring and Special Study		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
San Dieguito WQIP Contract		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
San Dieguito Watershed Management Area Compliance		\$60,400	100%				0%	\$60,400	\$0	\$0	\$0	\$0
Technical Support - JRMP Update		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
Technical Support - Jurisdictional Compliance		\$72,515	100%				0%	\$72,515	\$0	\$0	\$0	\$0
Trash Amendment Regulation Compliance		\$70,000	100%				0%	\$70,000	\$0	\$0	\$0	\$0
Transitional Dry Weather Monitoring Program		\$0	100%				0%	\$0	\$0	\$0	\$0	\$0

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	FY 2017 Budget	Percent Allocation					Amount Allocation				
		Flow	BOD	TSS	Customer	General	Flow	BOD	TSS	Customer	General
<b>558-420 WASTEWATER</b>											
<b>5160-558-440 TRAINING AND MEETINGS</b>											
Seminars, Conferences, Workshops	\$8,000	100%				0%	\$8,000	\$0	\$0	\$0	\$0
<b>5161-558-440 MILEAGE REIMBURSEMENT</b>											
Miscellaneous	\$2,000	100%				0%	\$2,000	\$0	\$0	\$0	\$0
<b>5162-558-440 DUES AND SUBSCRIPTIONS</b>											
BMP Manuals	\$800	100%				0%	\$800	\$0	\$0	\$0	\$0
CASQA Membership	\$770	100%				0%	\$770	\$0	\$0	\$0	\$0
Professional Licensing Fees	\$1,000	100%				0%	\$1,000	\$0	\$0	\$0	\$0
<b>5167-558-440 ADVERTISING AND PRINTING</b>											
Public Education and Awareness Program	\$6,000	100%				0%	\$6,000	\$0	\$0	\$0	\$0
<b>5173-558-440 OTHER TELEPHONE</b>											
Cell Phones	\$2,400	100%				0%	\$2,400	\$0	\$0	\$0	\$0
<b>5190-558-440 OTHER EXPENSE</b>											
Permits and Fees	\$38,000	100%				0%	\$38,000	\$0	\$0	\$0	\$0
<b>5193-558-440 SOFTWARE</b>											
Pendragon, Adobe	\$200	100%				0%	\$200	\$0	\$0	\$0	\$0
<b>5194-558-440 MINOR OFFICE EQUIPMENT</b>											
Computer Screens, Tablets, etc.	\$3,000	100%				0%	\$3,000	\$0	\$0	\$0	\$0
<b>Total Maintenance &amp; Operations</b>	<b>\$493,085</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>\$493,085</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	TRUE										
<b>Capital Outlay</b>											
<b>5209-558-440 OTHER CAPITAL OUTLAY</b>											
Stormwater BMP's, Retrofits, and Equipment	\$100,000	100%				0%	\$100,000	\$0	\$0	\$0	\$0
<b>Total Capital Outlay</b>	<b>\$100,000</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>\$100,000</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	TRUE										
<b>Internal Service</b>											
<b>5164-558-440 FLEET SERVICES</b>											
Fleet Services	\$32,515	100%				0%	\$32,515	\$0	\$0	\$0	\$0
<b>5165-558-440 DUPLICATING</b>											
Duplicating	\$0	100%				0%	\$0	\$0	\$0	\$0	\$0
<b>5178-558-440 OFFICE AUTOMATION</b>											
Office Automation	\$2,665	100%				0%	\$2,665	\$0	\$0	\$0	\$0
<b>5183-558-440 INSURANCE</b>											
General Liability Insurance	\$15,995	100%				0%	\$15,995	\$0	\$0	\$0	\$0
Property Insurance	\$405	100%				0%	\$405	\$0	\$0	\$0	\$0
<b>Total Internal Service</b>	<b>\$51,580</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>\$51,580</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>
	TRUE										
<b>Allocations</b>											
<b>5901-558-440 ALLOCATED IN</b>											
Engineering	\$246,450	100%				0%	\$246,450	\$0	\$0	\$0	\$0
Maintenance/Streets	\$27,760	100%				0%	\$27,760	\$0	\$0	\$0	\$0
Maintenance/Parks	\$22,029	100%				0%	\$22,029	\$0	\$0	\$0	\$0
Successor Agency-Housing	\$6,075	100%				0%	\$6,075	\$0	\$0	\$0	\$0
Water	\$16,560	100%				0%	\$16,560	\$0	\$0	\$0	\$0
Wastewater	\$18,231	100%				0%	\$18,231	\$0	\$0	\$0	\$0
<b>5902-558-440 ALLOCATED OUT</b>											
Water	(\$93,580)	100%				0%	(\$93,580)	\$0	\$0	\$0	\$0
Wastewater	(\$257,675)	100%				0%	(\$257,675)	\$0	\$0	\$0	\$0
<b>Total Allocations</b>	<b>(\$14,150)</b>	<b>100%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>0%</b>	<b>(\$14,150)</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>	<b>\$0</b>