VENTURA COUNTY

Water Rate Study
Waterworks District No. 1 (Moorpark)

Final Report / December 7, 2016

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December 7, 2016

Ms. Michaela Brown, Director
County of Ventura Water and Sanitation Department
PO Box 250
Moorpark, CA 93022

Subject: Water Rate Study Report for Waterworks District No. 1 Moorpark

Dear Ms. Brown:

Raftelis Financial Consultants, Inc. (RFC) is pleased to present this Water Rate Study Report (Report) to the County of Ventura Water and Sanitation Department (County) for Waterworks District No. 1 – Moorpark (District). The Study involved a comprehensive review of the District's financial plan, rates, and the development of connection fees.

The rate structure has been simplified, and we are confident that the recommended rates, based on cost of service principles, are fair and equitable to the District's customers. RFC prepared an alternative scenario based on the District's allocation of groundwater. The Report includes a brief Executive Summary, details of the District's water system, financial plan, cost of service analysis, and a detailed rate derivation in the subsequent sections.

It has been a pleasure working with you, and we wish to express our thanks for all of the support from you and other staff members during the course of this Study. If you have any questions, please do not hesitate to contact me at (626) 583-1894.

Sincerely,
RAFTELIS FINANCIAL CONSULTANTS, INC.

Sudhir Pardiwala, PE
Executive Vice President

Hannah Phan
Senior Consultant

Nancy Phan
Associate Consultant

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1 EXECUTIVE SUMMARY

1.1 BACKGROUND

In early 2016, the Ventura County Water and Sanitation Department (County) contracted with Raftelis Financial Consultants, Inc. (RFC) to conduct a Water Rate Study for Waterworks District No. 1 – Moorpark (District), which includes a five-year financial plan, cost of service analysis, and rate design. This Report presents our recommended financial plan and the resulting rates for implementation in February 2017 and in January of subsequent years of the planning period.

This Executive Summary is an overview of the water rates and contains a description of the rate study process, methodology, results, and recommendations for the District's water rates. The District wishes to establish fair and equitable rates that:

- Provide adequate revenues to meet the District's operational and capital expenses and reserve requirements for the financial stability of the District
- Are easy for customers to understand, implement, and update in the future
- Proportionally allocate the costs of providing service in accordance with Article XIII D of California Constitution, commonly known as Proposition 218

1.2 SUMMARY

RFC worked closely with District staff to develop a long-term financial plan which sets forth the total revenue adjustments, proposed debt, and capital investment for the next five years. District staff selected a financial plan that entails a 9.5% increase in revenues per year starting in fiscal year (FY) 2017, approximately $65 million in capital projects over the next five years, with approximately $45.4 million in State Revolving Fund (SRF) loans to fund the Moorpark Desalter project.

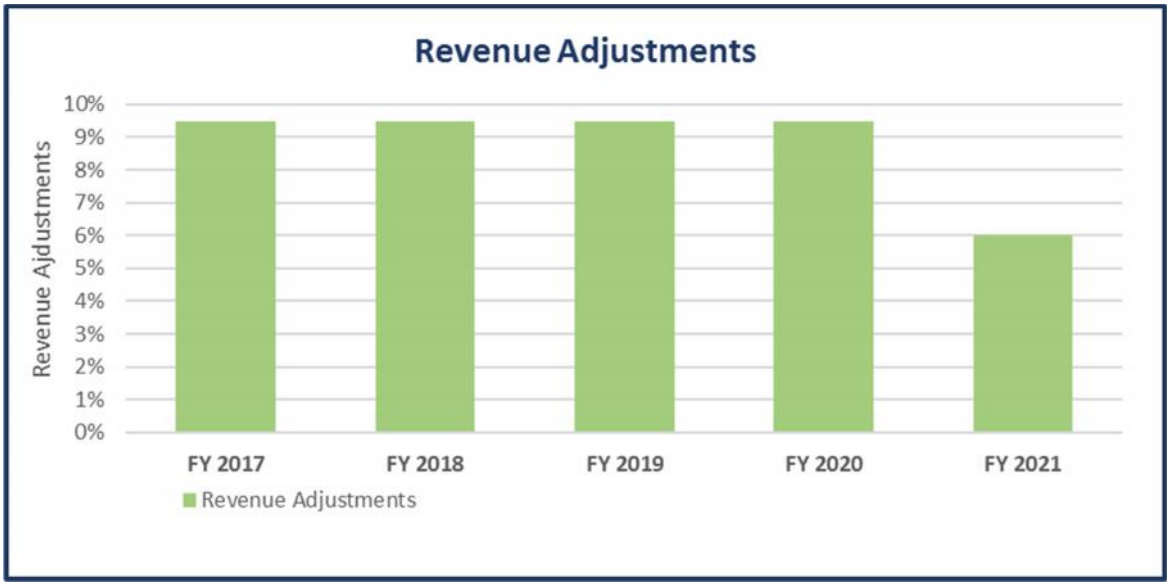
The proposed rate structure consists of a commodity rate, a monthly service charge, and a monthly private fire line charge. The monthly service charge and private fire line charge recovers approximately 10% of total rate revenue for FY 2017 and increases by 1% each following year. The commodity rate is non-tiered for all customer classes, except the Residential customer class, which consists of three tiers.

1.3 FINANCIAL PLAN

In order to determine the revenue adjustments needed to meet the ongoing expenses of the District 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. Although the graph shows anticipated revenue adjustments for the entire five-year period, the District will review and confirm the necessary revenue adjustments on an annual basis.

Figure 1-1: Proposed Revenue Adjustments



Factors Affecting Revenue Adjustments

The following items were used to develop the District's revenue requirement:

- **O&M Expenses**: Overall, the District's FY 2018 O&M expenses are expected to increase approximately 10% from FY 2017, and 7% per year in FY 2019 and FY 2020. The District's water supply cost makes up approximately 63% of total O&M expenses and is estimated to increase 6% annually. The Desalter project is estimated to be online by FY 2021 and will decrease the water supply cost and the total operating expenses. **Figure 1-2** shows the projected O&M expenses for the District over the Study period.
- **Capital Investment**: The District is expected to spend approximately $19.5M on capital projects from FY 2017 to FY 2021 in addition to the Desalter project. The Desalter project will cost approximately $46M (inflated for future year dollars following FY 2017) and is expected to be fully funded through SRF loans. **Figure 1-3** shows the total amount of capital projects and their funding sources.
- **Reserve Funding**: Without revenue adjustments, the District's reserves will be nearly depleted in FY 2018 and will create a deficit in FY 2019. The revenue adjustments in **Figure 1-1** were selected in order to offset the depletion of reserves due to increasing O&M expenses and capital projects, while still remaining affordable for the District's customers. The reserves balance is shown in **Figure 1-4**. RFC recommends that the District maintain reserve levels consisting of the following targets consistent with industry practice:
  - **Operating:** 25% percent of O&M expenses
  - **Capital (Replacement):** 2% of total net assets

- **Rate Stabilization:** 10% of rate revenue

Figure 1-2: Projected O&M Expenses

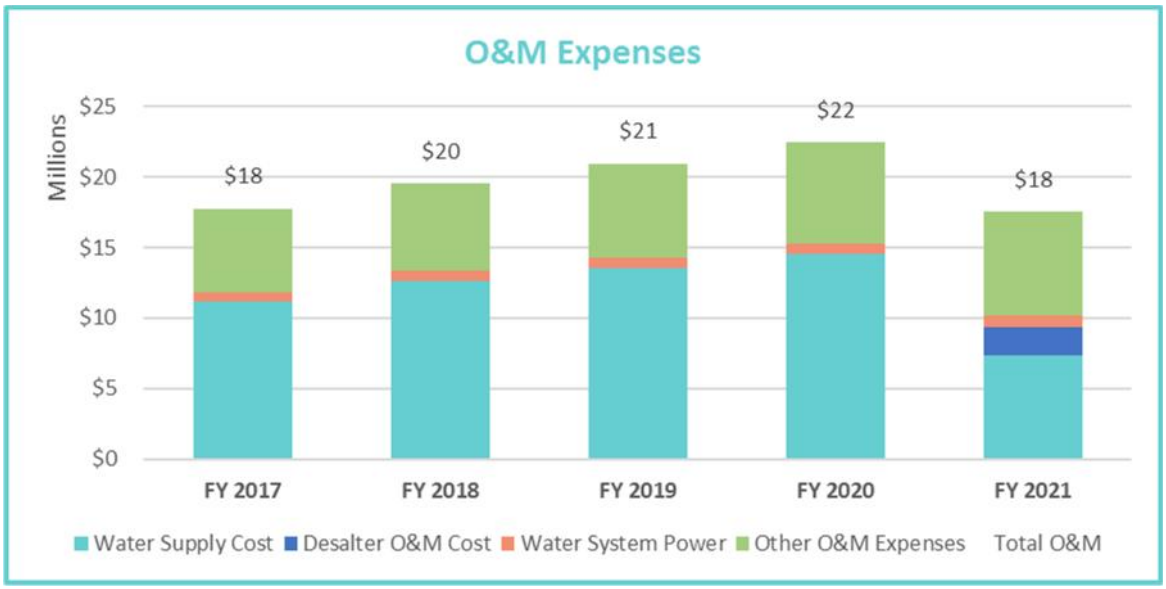


Figure 1-3: Proposed Capital Financing Plan

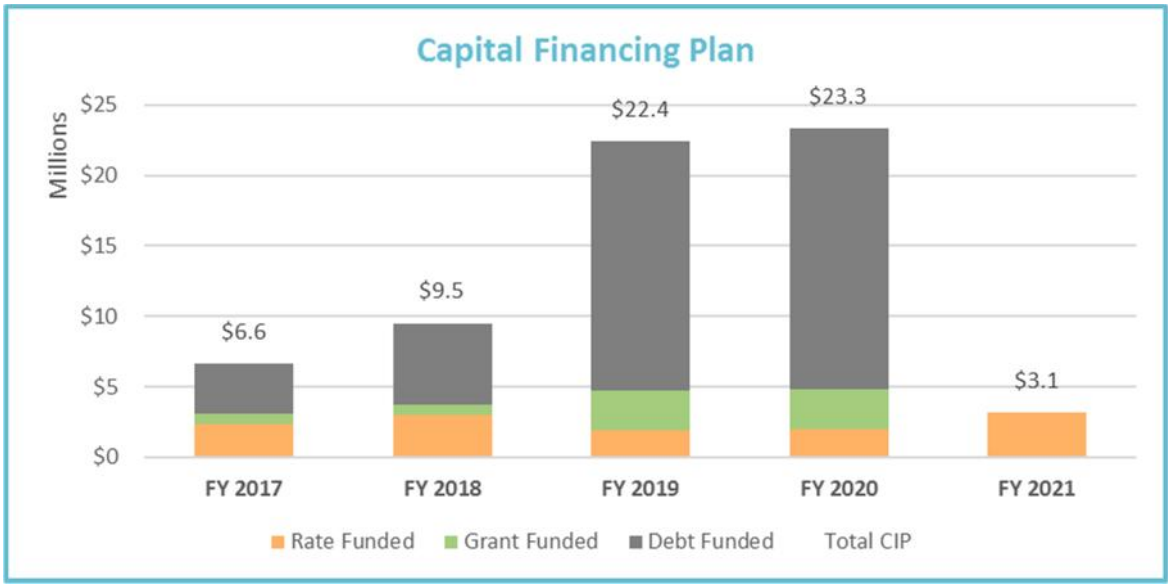
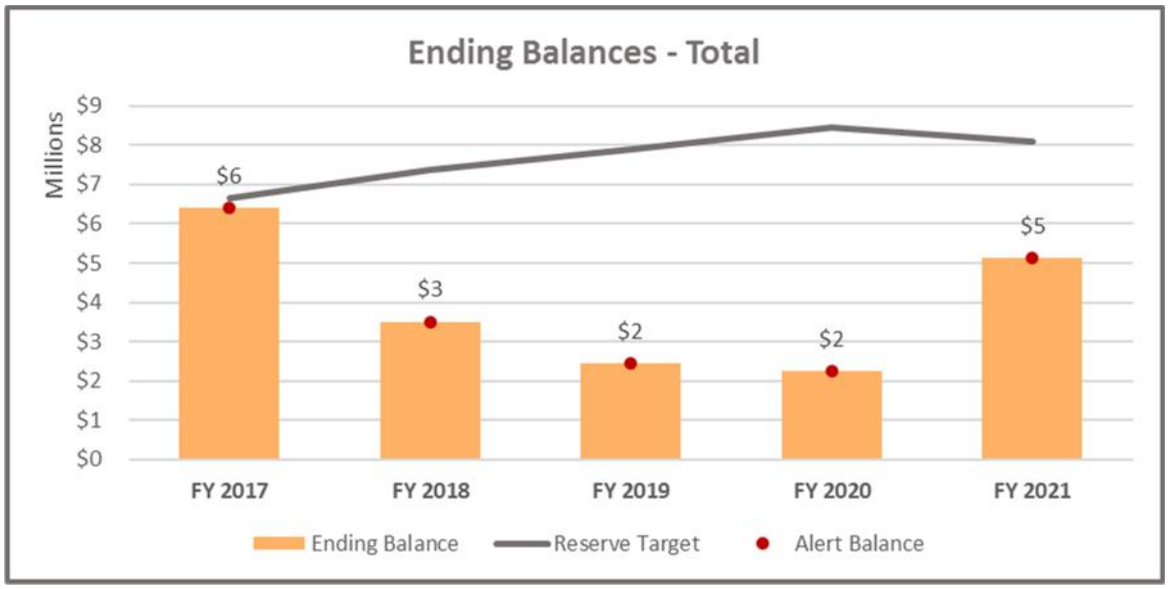


Figure 1-4: Projected Ending Balances



1.4 COST OF SERVICE ANALYSIS AND RATE DESIGN

The water rates were developed using cost of service principles set forth by the American Water Works Association (AWWA) M1 Manual, *Principles of Water Rates, Fees, and Charges* (M1 Manual). Cost of service principles endeavor to distribute costs to customer classes in accordance with the way each customer class uses the water system.

For this Study, the Base-Extra Capacity Method of the M1 Manual was utilized for allocating costs. This method separates costs into four different components: (1) base costs, (2) extra capacity (peaking) costs, (3) customer costs, and (4) direct fire protection costs. Base costs are costs that are associated with meeting average daily demand requirements and include operations and maintenance costs and capital costs designed to meet average load conditions. Also included in the base costs is the water supply costs, including groundwater pumping costs and purchased water costs from Calleguas Municipal Water District. Extra capacity costs are costs associated with meeting peak demand. Customer costs are costs associated with serving customers, such as meter reading, billing, customer service, etc. Direct fire protection costs are related solely to the fire protection capacity of a water system, which includes both public fire protection, which benefits everyone, and private fire protection, which directly benefits customers with private fire service connections.

1.5 PROPOSED WATER RATES

The proposed rate structure for the District consists of three components: a monthly service charge, a monthly private fire line charge, and a commodity rate. The monthly service charge is a fixed charge based on the size of meter serving a property and is intended to recover costs related to meter reading and maintenance, customer service and billing, and a portion of capacity related costs. The monthly

private fire line charge is intended to recover costs related to private fire protection and a portion of the customer service and billing costs. The private fire line charge is only charged to customers who require a private fire service meter. The commodity rate recovers all remaining costs associated with meeting costs related to water supply and production, base delivery, and extra capacity.

Table 1-1 shows the proposed monthly service charges by meter size for the next four years, starting in January 24, 2017 and January of each subsequent year. In FY 2021, the Desalter is expected to come online, thus changing the water supply mix and related costs. We recommend that the District conduct another COS study at that time to recalculate the water rates. **Table 1-2** shows the proposed monthly private fire line charges by fire line size. **Table 1-4** shows RFC's recommended commodity rates for each customer class and tier, which includes a blended water supply rate for all customers. **Table 1-4** shows an alternate scenario commodity rates for each customer class and tier, that the District developed using pumping data which supported that agriculture customers receive 50% of their water demand from the groundwater supply source. In order to increase revenue stability, the proposed rate schedule is designed to recover approximately 1% per year additionally on the fixed service charges for the next four years. Thus, in FY 2018, the percentage of rate revenue collected from fixed charges will be approximately 11% of total rate revenues.

Table 1-1: Proposed Monthly Service Charges ($/month)

Monthly Meter Charges	January 2017	January 2018	January 2019	January 2020
Meter Size				
3/4"	$10.41	$12.43	$14.85	$17.62
1"	$14.04	$16.77	$20.04	$23.78
1 1/2"	$23.09	$27.57	$32.94	$39.08
2"	$33.96	$40.55	$48.44	$57.47
3"	$68.37	$81.63	$97.52	$115.69
4"	$119.08	$142.17	$169.83	$201.47
6"	$240.43	$287.04	$342.89	$406.76

Table 1-2: Proposed Private Fire Line Charges ($/month)

Monthly Private Fire Line Charges	January 2017	January 2018	January 2019	January 2020
2"	$6.81	$7.46	$8.17	$8.95
3"	$10.29	$11.27	$12.35	$13.53
4"	$16.29	$17.84	$19.54	$21.40
6"	$37.84	$41.44	$45.38	$49.70
8"	$75.01	$82.14	$89.95	$98.50
10"	$130.92	$143.36	$156.98	$171.90
20"	$784.60	$859.14	$940.76	$1,030.14

Table 1-3: RFC Recommended Commodity Rates 2017 – 2020 ($/hcf)[1]

Commodity Rates		January 2017	January 2018	January 2019	January 2020
Residential					
Tier 1	0-10 hcf	$3.20	$3.47	$3.76	$4.08
Tier 2	>10-25 hcf	$3.83	$4.16	$4.51	$4.89
Tier 3	>25 hcf	$4.40	$4.77	$5.17	$5.60
Residential Non-Tiered		$3.92	$4.25	$4.61	$5.00
Residential Multi Family		$3.39	$3.68	$3.99	$4.32
Commercial		$3.67	$3.98	$4.31	$4.67
Agricultural		$3.86	$4.19	$4.54	$4.92
Industrial		$3.44	$3.73	$4.04	$4.38
Institutional		$4.12	$4.47	$4.84	$5.24
Temporary Construction		$5.22	$5.66	$6.13	$6.64

Table 1-4: District's Alternate Scenario Commodity Rates 2017 – 2020 ($/hcf)[2]

Commodity Rates		January 2017	January 2018	January 2019	January 2020
Residential					
Tier 1	0-10 hcf	$3.33	$3.61	$3.91	$4.24
Tier 2	>10-25 hcf	$3.97	$4.31	$4.67	$5.06
Tier 3	>25 hcf	$4.54	$4.93	$5.34	$5.79
Residential Non-Tiered		$4.05	$4.39	$4.76	$5.16
Residential Multi Family		$3.52	$3.82	$4.14	$4.49
Commercial		$3.81	$4.13	$4.48	$4.85
Agricultural		$3.42	$3.71	$4.02	$4.36
Industrial		$3.58	$3.89	$4.22	$4.57
Institutional		$4.26	$4.62	$5.01	$5.43
Temporary Construction		$5.35	$5.80	$6.28	$6.80

Together, the three components of the District's proposed water rates are designed to recover the costs of providing water service, encourage water conservation, and increase the financial stability of the District.

[1] RFC recommended commodity rates are shown in **Table 6-5** and **Table 6-9** in Section 6.
[2] District's alternate scenario based on staff's analysis of groundwater to Agricultural customers are shown in **Table 6-6** and **Table 6-10** in Section 6.

1.6 PROPOSED CONNECTION FEES

As part of the Study, RFC reviewed and updated the District's connection fees, which are one-time fee that a new customer or developer pays to connect to the water system. **Table 1-5** shows the District's proposed connection fees per meter size.

Table 1-5: Proposed Connection Fees

Meter Size	Proposed Fees
3/4"	$4,393
1"	$7,322
1 1/2"	$14,643
2"	$23,429
3"	$51,252
4"	$92,253
6"	$190,363

2 WATER SYSTEM

This section briefly describes the water system and the District provided customer account and water usage data for FY 2016.

2.1 WATER SOURCES AND SYSTEM FACILITIES

The District provides water service to a population of approximately 38,700 over an area of approximately 20,000 acres that includes all of the City of Moorpark and the contiguous, unincorporated areas north and west of the City. The District's customer accounts include approximately 10,000 residential and 171 agricultural customers. The District encompasses 138 miles of water lines, 5 groundwater wells, 18 tanks, 10 booster pump stations, and 4 lift stations. Water is procured from two sources: approximately 18% of the water is extracted from local groundwater and the remaining 82% is imported water from the Calleguas Municipal Water District.

2.2 NUMBER OF ACCOUNTS

Table 2-1 shows the estimated number of potable water accounts by meter size for FY 2017 (less fire and temporary construction accounts). RFC estimated the number of accounts by tabulating FY 2016 actual account data provided by the District and escalating the number of accounts based on the growth factors described in **Section 2.3**.

Table 2-1: Estimated Water Accounts by Meter Size (FY 2017)

Meter Size	Residential	Residential Multi Family	Commercial	Agricultural	Industrial	Institutional	Total
3/4"	8,556	3	58	0	9	20	**8,646**
1"	1,208	10	91	10	29	38	**1,386**
1 1/2"	132	83	48	10	19	64	**356**
2"	167	29	18	51	5	48	**318**
3"	6	2	4	69	2	10	**93**
4"	0	2	6	16	0	0	**24**
6"	0	0	1	0	0	0	**1**

2.3 ACCOUNT AND WATER USE GROWTH ASSUMPTIONS

Table 2-2 displays the account growth assumptions as provided by the District. The account growth assumptions were used to project the number of accounts for the Study Period.

Table 2-2: Account Growth Assumptions

Customer Class	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Residential	1%	1%	1%	1%	1%
Residential Multi Family	1%	1%	1%	1%	1%
Commercial	1%	1%	1%	1%	1%
Agricultural	1%	1%	1%	1%	1%
Industrial	1%	1%	1%	1%	1%
Institutional	1%	1%	1%	1%	1%
Temporary Construction	0%	0%	0%	0%	0%

Table 2-3 shows the water usage demand factor that was determined by the District for each customer class. This table shows that the District will see an increase of approximately 10% in FY 2017 compared to FY 2016 due to projected rebound in the water usage.

Table 2-3: Water Use Assumptions

Customer Class	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Residential	110%	110%	100%	100%	100%
Residential Multi Family	110%	110%	100%	100%	100%
Commercial	110%	110%	100%	100%	100%
Agricultural	110%	110%	100%	100%	100%
Industrial	110%	110%	100%	100%	100%
Institutional	110%	110%	100%	100%	100%
Temporary Construction	110%	100%	100%	100%	100%

2.4 WATER USAGE

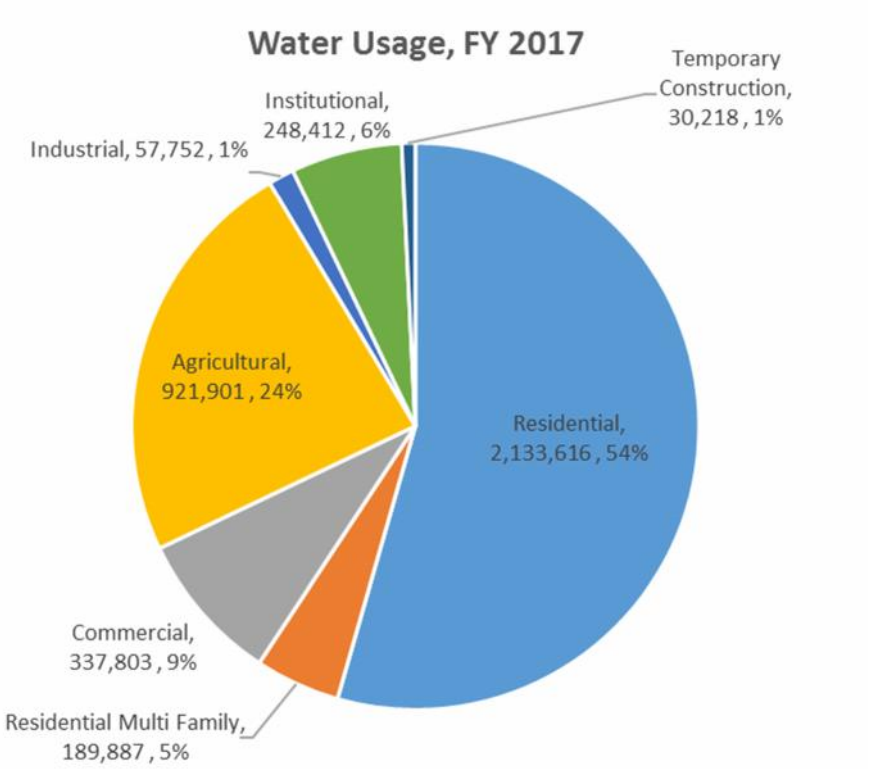
The account growth and water usage assumptions in the previous section were utilized to project FY 2017 water usage for future years, as shown in **Table 2-4**. The following estimated annual water usage by customer class is shown in hundred cubic feet (hcf) for the Study period. Beginning in FY 2018, water usage from the Commercial class is expected to decrease due to a conversion of a golf course account to recycled water.

Table 2-4: Water Usage by Customer Class

Customer Class	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Residential	2,133,616	2,370,447	2,394,151	2,418,093	2,442,274
Residential Multi Family	189,887	210,964	213,074	215,204	217,356
Commercial	337,803	234,960	237,310	239,683	242,080
Agricultural	921,901	1,024,232	1,034,474	1,044,819	1,055,267
Industrial	57,752	64,162	64,804	65,452	66,107
Institutional	248,412	275,986	278,745	281,533	284,348
Temporary Construction	30,218	30,218	30,218	30,218	30,218
Total	**3,919,588**	**4,210,969**	**4,252,777**	**4,295,003**	**4,337,650**

Figure 2-1 shows the FY 2017 water usage by customer class. The first number in the pie chart is the water use in hcf followed by the percentage of total water usage by customer class.

Figure 2-1: Water Usage by Customer Class (FY 2017)



3 FINANCIAL PLAN

This section describes the assumptions used in projecting water revenue, O&M expenses, capital projects, reserves and coverage requirements that determine the overall revenue adjustments required to ensure the financial stability of the District. Revenue adjustments represent the average increase in rates for the District as a whole. Rate changes for individual classes will depend on the cost of service analysis, which is further explained in **Section 5**.

3.1 REVENUES

Table 3-2 shows the District's revenue budget for FY 2017. The projected water sales revenue for the years following FY 2017 were not calculated based on the existing rate structure, but rather inflated proportionally by each year's estimated water usage. For example, the total amount of usage increased by approximately 7.5% from FY 2017 to 2018. Subsequently, the projected water sales revenue for FY 2018 is 7.5% more than that of FY 2017.

Table 3-1: Projected Revenues

O&M Revenues	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Investment Income	$7,700	($6,112)	($5,520)	($3,978)	$40,786
Rent and Concessions	$330,400	$333,704	$337,041	$340,411	$343,816
State Disaster Relief	$0	$0	$0	$0	$0
State Other	$0	$0	$0	$0	$0
Federal Disaster Relief	$0	$0	$0	$0	$0
Other Governmental Agencies	$0	$0	$0	$0	$0
Planning And Engineering Services External	$40,000	$40,400	$40,804	$41,212	$41,624
Permit Fees	$2,400	$2,424	$2,448	$2,473	$2,497
Line Extension Fee	$300	$303	$306	$309	$312
Meter Sales And Install Fee	$31,600	$31,916	$32,235	$32,558	$32,883
Water Sales	$15,113,000	$16,236,498	$16,397,698	$16,560,509	$16,724,949
Water Standby Charges	$1,700	$1,717	$1,734	$1,752	$1,769
Other Sales	$78,600	$79,386	$80,180	$80,982	$81,791
Miscellaneous Revenue	$388,400	$392,284	$396,207	$400,169	$404,171
Total - O&M Revenues	**$15,994,100**	**$17,112,520**	**$17,283,133**	**$17,456,396**	**$17,674,599**

Capital Revenues	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Investment Income	$56,600	$29,072	$26,593	$19,885	$18,618
Capital Improve Charges	$75,000	$75,000	$75,000	$75,000	$75,000
Longterm Debt Proceeds	$0	$0	$0	$0	$0
Funded Depreciation	$801,300	$928,041	$1,226,796	$1,537,521	$1,579,401
Total - Capital Revenues	**$932,900**	**$1,032,112**	**$1,328,390**	**$1,632,406**	**$1,673,019**

3.2 INFLATIONARY AND OTHER ASSUMPTIONS

To ensure that future costs are reasonably projected, we make informed assumptions regarding inflationary factors with input from District staff. **Table 3-2** shows the inflationary assumptions that were utilized in the financial plan. The general, salary, benefits, utilities, water costs, capital, and non-inflated

factors were used to project expenses for future years. The non-rate revenue inflation factor was used to project the District's miscellaneous revenue for future years.

Table 3-2: Inflationary Assumptions

Inflation Factor	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
General	3.0%	3.0%	3.0%	3.0%	3.0%
Salary	3.5%	3.5%	3.5%	3.5%	3.5%
Benefits	5.0%	5.0%	5.0%	5.0%	5.0%
Utilities	5.0%	5.0%	5.0%	5.0%	5.0%
Water Costs	6.0%	6.0%	6.0%	6.0%	6.0%
Capital	4.0%	4.0%	4.0%	4.0%	4.0%
Non-Inflated	0.0%	0.0%	0.0%	0.0%	0.0%
Non-Rate Revenues	1.0%	1.0%	1.0%	1.0%	1.0%
Reserve Interest Rate	0.5%	0.5%	1.0%	1.5%	2.0%

The assumptions shown in **Table 3-2** were incorporated into the financial plan. To develop the financial plan, RFC projected annual revenues at current rates and expenses, modeled reserve balances, and calculated capital expenditure funding sources to estimate the amount of annual rate revenue required. Annual rate revenues are smoothed out to avoid rate spikes. This section of the report discusses all the above elements to ensure the fiscal sustainability and solvency of the District.

3.3 O&M EXPENSES

The District's O&M budget is shown in **Table 3-3**. The budget year, or the year in which future years' budget is projected from, and the test year, or the year in which the rates are calculated from, are both FY 2017 for the Study. The financial plan for the Study period is from FY 2017 to 2021. The O&M budget incorporates the inflationary factors in **Table 3-2**.

Table 3-3: Projected O&M Expenses

	O&M Expenses	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Voice Data Isf	$8,300	$8,549	$8,805	$9,070	$9,342
2	Radio Communications Isf	$0	$0	$0	$0	$0
3	General Insurance Allocation Isf	$30,700	$31,621	$32,570	$33,547	$34,553
4	Equipment Maintenance	$6,000	$6,180	$6,365	$6,556	$6,753
5	Equipment Maintenance Contracts	$348,000	$358,440	$369,193	$380,269	$391,677
6	Maintenance Supplies	$230,000	$236,900	$244,007	$251,327	$258,867
7	Water System Maintenance Supply	$110,000	$113,300	$116,699	$120,200	$123,806
8	Buildings And Improvements Mainte	$75,000	$77,250	$79,568	$81,955	$84,413
9	Other Buildings And Improvements M	$0	$0	$0	$0	$0
10	Memberships And Dues	$9,600	$9,888	$10,185	$10,490	$10,805
11	Cost Allocation Plan Charges	$17,900	$18,437	$18,990	$19,560	$20,147
12	Miscellaneous Expense	$10,000	$10,300	$10,609	$10,927	$11,255
13	Cross Connection Fees	$18,900	$19,467	$20,051	$20,653	$21,272
14	Federal State Permits And Fees	$25,900	$26,677	$27,477	$28,302	$29,151
15	Conservation Program	$4,000	$4,120	$4,244	$4,371	$4,502
16	Printing And Binding Non Isf	$2,000	$2,060	$2,122	$2,185	$2,251
17	Mail Center Isf	$76,800	$79,104	$81,477	$83,921	$86,439
18	Purchasing Charges Isf	$23,000	$23,690	$24,401	$25,133	$25,887
19	Graphics Charges Isf	$60,400	$62,212	$64,078	$66,001	$67,981
20	Engineering And Technical Surveys	$110,000	$113,300	$116,699	$120,200	$123,806
21	Refuse Disposal	$1,000	$1,030	$1,061	$1,093	$1,126
22	Attorney Services	$22,900	$23,587	$24,295	$25,023	$25,774
23	Lab Services	$29,000	$29,870	$30,766	$31,689	$32,640
24	Collection And Billing Services	$105,500	$108,665	$111,925	$115,283	$118,741
25	Other Professional And Specialized M	$92,100	$94,863	$97,709	$100,640	$103,659
26	Information Technology Isf	$0	$0	$0	$0	$0
27	County Geographical Information Sys	$800	$824	$849	$874	$900
28	Management And Admin Survey Isf	$230,900	$237,827	$244,962	$252,311	$259,880
29	Public Works Isf Charges	$2,855,300	$2,940,959	$3,029,188	$3,120,063	$3,213,665
30	Professional And Specialized Service	$2,000	$2,060	$2,122	$2,185	$2,251
31	Publications And Legal Notices	$800	$824	$849	$874	$900
32	Rent And Leases Equipment Noncou	$12,000	$12,360	$12,731	$13,113	$13,506
33	Computer Equipment <5000	$10,500	$10,815	$11,139	$11,474	$11,818
34	Furniture And Fixtures <5000	$2,000	$2,060	$2,122	$2,185	$2,251
35	Small Tools And Instruments	$0	$0	$0	$0	$0
36	Minor Equipment	$2,000	$2,060	$2,122	$2,185	$2,251
37	Meter Purchases	$495,000	$509,850	$525,146	$540,900	$557,127
38	Transportation Charges Isf	$8,900	$9,167	$9,442	$9,725	$10,017
39	Transportation Work Order	$2,000	$2,060	$2,122	$2,185	$2,251
40	Groundwater Extraction	$17,500	$19,186	$20,337	$21,557	$22,851
41	Water Supply Cost	$11,187,800	$12,626,201	$13,531,772	$14,502,125	$7,369,178
42	Water And Sewer System Power	$624,700	$704,697	$747,278	$792,433	$840,316
43	Moorpark Desalter - Power	$0	$0	$0	$0	$546,602
44	Moorpark Desalter - Labor	$0	$0	$0	$0	$161,422
45	Moorpark Desalter - Chemical	$0	$0	$0	$0	$999,220
46	Moorpark Desalter - Maintenance	$0	$0	$0	$0	$88,352
47	Moorpark Desalter - Membrane Rep	$0	$0	$0	$0	$0
48	Moorpark Desalter - Brine Disposal	$0	$0	$0	$0	$147,849
49	Contributions To Other Funds	$83,200	$85,696	$88,267	$90,915	$93,642
50	Funded Depreciation	$801,300	$928,041	$1,226,796	$1,537,521	$1,579,401
51	**Total - O&M Expenses**	**$17,753,700**	**$19,554,197**	**$20,960,537**	**$22,451,020**	**$17,520,497**

The water supply cost, shown in Line 41, is projected to decrease in FY 2021 after the Desalter project is online. The large reduction in imported water purchased from Calleguas will be partially offset by additional annual operational expenses from the Desalter, as shown in Lines 43-48.

3.4 WATER SUPPLY COST

The following section will explain the method that was used for calculating the water supply cost, shown in Line 41 in **Table 3-3**.

The District's water supply costs and availability are shown in **Table 3-4**. The Desalter project is expected to be completed by the end of FY 2020 and has an estimated annual production (Line 1) of 5,000 acre-feet per year (AFY) starting in FY 2021. The groundwater maximum (Line 2) is the total groundwater availability and is estimated to be 1,810 AFY at a cost of $10 per acre-feet (AF) in FY 2017 (Line 3). The Calleguas combined rates (Lines 4-6) include an average Tier 1 and 2 rate. The average Tier 1 and 2 rates for FY 2017 are an average of the calendar year (CY) 2016 and 2017 rates in order to account for a fiscal year calculation. The imported tier definition for Tier 1 (Line 8) is the maximum water availability for imported Tier 1 water. The monthly Capacity Reservation Charge and the Metropolitan Water District (MWD) Readiness-to-Serve (RTS) Charge (Lines 9-14) are fixed monthly charges related to imported water. The water loss (Line 15) is the percentage difference between the total water production (the amount of water the District pumps or imports) and the total water demand (the amount of water the District's customers use) that results from distribution line and hydrant testing, leaks, and inaccurate meters, etc.

Table 3-4: Water Supply Availability and Unit Costs

	Water Supply	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Desalter Production (AF)**	0	0	0	0	5,000
2	**Groundwater Maximum (AF)**	1,810	1,810	1,810	1,810	1,810
3	GMA Charge	$10	$11	$11	$12	$13
4	**Calleguas Combined Rates (per AF)**					
5	Average Tier 1 rate	$1,295	$1,372	$1,455	$1,542	$1,635
6	Averate Tier 2 rate	$1,433	$1,519	$1,610	$1,706	$1,809
7	**Imported Tier Definitions (AF)**					
8	Tier 1	10,723	10,723	10,723	10,723	10,723
9	**Monthy Capacity Reservation Charge**					
10	July-Dec	$28,022	$28,498	$30,208	$32,020	$33,941
11	Jan-Jun	$28,498	$30,208	$32,020	$33,941	$35,978
12	**Monthly MWD RTS Charge**					
13	July-Dec	$54,637	$57,915	$61,390	$65,074	$68,978
14	Jan-Jun	$54,637	$57,915	$61,390	$65,074	$68,978
15	**Water Loss**	6%	6%	6%	6%	6%

Table 3-5 describes the total amount of water demand from the District's customers and the total amount of water produced from each source. The water loss percentage in **Table 3-4** (Line 15) is utilized to calculate the total water production. The total water demanded is 6% less than the total water produced to account for water loss.

Table 3-5: Total Water Demand and Production

	Water Production (AF)	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Desalter (AF)	0	0	0	0	5,000
2	Local Groundwater (AF)	1,755	1,810	1,810	1,810	1,810
3	Imported (AF)	7,850	8,437	8,539	8,642	3,745
4	**Total - Water Production (AF)**	**9,605**	**10,247**	**10,349**	**10,452**	**10,555**
5	Total Demand (AF)	8,998	9,667	9,763	9,860	9,958

Table 3-6 summarizes the total water supply cost for the District. The total produced imported water (Lines 1-3) is determined based on the imported tier definitions (**Table 3-4**, Line 8) and the imported water production (**Table 3-5**, Line 3). The imported water costs (Lines 4-6) are calculated by multiplying the total amount of imported water in each tier by the Calleguas combined rates for the respective tier (**Table 3-4**, Lines 4-6). The annual Capacity Reservation Charge and the MWD RTS Charge are calculated from the monthly rates (**Table 3-4**, Lines 9-14). The total purchased water cost (Line 10) is the sum of the total imported water cost (Line 7) and the fixed Charges (Lines 8-9). The total groundwater extraction cost (Line 11) is calculated by multiplying the total groundwater pumped (**Table 3-5**, Line 2) by the groundwater pumping cost (**Table 3-4**, Line 3). The total water supply cost (Line 12) is the sum of the total purchased water costs and groundwater extraction cost, which are both utilized in the O&M expense projections in **Table 3-2**.

Table 3-6: Calculated Water Supply Costs

	Calculated Water Costs	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Produced Imported Water (AF)**	**7,850**	**8,437**	**8,539**	**8,642**	**3,745**
2	Amount in Tier 1	7,850	8,437	8,539	8,642	3,745
3	Amount in Tier 2	0	0	0	0	0
4	**Imported Water Cost**					
5	Tier 1	$10,163,474	$11,578,985	$12,421,722	$13,325,472	$6,121,926
6	Tier 2	$0	$0	$0	$0	$0
7	**Total - Imported Water Cost**	**$10,163,474**	**$11,578,985**	**$12,421,722**	**$13,325,472**	**$6,121,926**
8	Capacity Reservation Charge (CRC)	$339,116	$352,234	$373,368	$395,770	$419,516
9	MWD RTS Charge	$655,644	$694,983	$736,682	$780,882	$827,735
10	**Total Purchased Water Costs**	**$11,158,234**	**$12,626,201**	**$13,531,772**	**$14,502,125**	**$7,369,178**
11	**Total Groundwater Extraction Cost**	**$17,550**	**$19,186**	**$20,337**	**$21,557**	**$22,851**
12	**Total Water Supply Cost**	**$11,175,784**	**$12,645,387**	**$13,552,109**	**$14,523,682**	**$7,392,029**

3.5 CAPITAL IMPROVEMENT PLAN

Table 3-7 and **Table 3-8** show the District's five-year CIP, designated as Replacement and Acquisition projects, respectively. The CIP to spend (**Table 3-7**, Line 24 and **Table 3-8**, Line 6) is the total amount of capital expenditures that the District expects to spend based on the CIP to spend percentage shown in **Table 3-9**. The unfunded CIP (**Table 3-7**, Line 25 and **Table 3-8**, Line 7) is the cumulative amount of CIP that is not spent (based on the CIP to spend amount) for each year. The total CIP for each year is inflated according to the inflation assumptions in **Table 3-2**.

Table 3-7: Inflated Capital Projects – Replacement

	Inflated Replacement Capital Projects	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Stockton Reservoir #1	$320,000	$1,332,864	$0	$0	$0
2	Home Acres Reservoir #1 & Pipelines	$276,000	$1,291,680	$1,343,347	$0	$0
3	Replacement of Five Pressure Reducing Stations	$0	$0	$0	$0	$0
4	Walnut Acres Tract 4" Water line Replacement	$400,000	$416,000	$0	$0	$0
5	0.2 MG Reservoir No. 2 at Fruitvale	$0	$0	$36,342	$75,591	$628,916
6	1.5 MG TR 5187 Ridgemark Reservoir No. 2	$0	$0	$0	$0	$93,355
7	Well Nos. 95 & 98 Water Treatment Facilities	$0	$0	$0	$0	$263,218
8	Emergency Booster Pump Station in 920 Zone	$0	$0	$0	$0	$14,740
9	10-inch Water Line from Pecan Ave. northward at 94	$0	$0	$0	$0	$39,658
10	8-inch Water Line between Stockton Road and Grim	$0	$0	$0	$0	$0
11	8-inch Water Line between Stockton Road and Grim	$0	$0	$0	$0	$0
12	10-inch Water Line North of Intersection of Los Ang	$0	$0	$0	$0	$0
13	12-inch Water Line between Stockton Road and Wel	$0	$0	$45,103	$93,814	$780,530
14	12-inch Water Line South of Well No. 98 in 944 Zone	$0	$0	$0	$0	$0
15	994 and 1250 Pressure Zones Connection	$0	$0	$0	$0	$0
16	Well 95 MCC Replacement - reuse Well 96	$100,000	$0	$0	$0	$0
17	Misc Water System Improvement	$550,000	$600,600	$655,855	$716,194	$782,083
18	SCADA Improvements	$225,000	$52,000	$56,784	$62,008	$67,713
19	Well 20/Palmer Blending Station/Ctrl w/ Walnut Cyn	$100,000	$0	$0	$0	$0
20	Reservoir Repairs, Relining, and Recoating	$120,000	$260,000	$283,920	$310,041	$338,564
21	Equipment	$134,000	$0	$0	$0	$0
22	Computer Software	$163,000	$0	$0	$0	$0
23	**Total - Inflated Replacement Capital Projects**	**$2,388,000**	**$3,953,144**	**$2,421,351**	**$1,257,647**	**$3,008,777**
24	CIP to Spend	$2,388,000	$2,964,858	$1,816,013	$943,236	$2,256,583
25	Unfunded CIP	$0	$988,286	$1,593,624	$1,908,036	$2,660,230

Table 3-8: Inflated Capital Projects – Acquisition

	Inflated Acquisition Capital Projects	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	Moorpark Desalter	$4,229,000	$4,398,160	$18,297,427	$19,029,324	$0
2	Moorpark Desalter Mitigation Projects	$0	$2,080,000	$2,163,200	$2,249,728	$760,408
3	1.5 MG Reservoir No. 2 at Moorpark Yard	$0	$83,366	$173,402	$1,442,706	$93,776
4	1 MG Stockton Reservoir No. 2	$0	$0	$0	$0	$71,595
5	**Total - Inflated Acquisition Capital Projects**	**$4,229,000**	**$6,561,526**	**$20,634,029**	**$22,721,758**	**$925,779**
6	CIP to Spend	$4,229,000	$6,540,685	$20,590,679	$22,361,081	$884,436
7	Unfunded CIP	$0	$20,842	$64,192	$424,869	$466,211

Table 3-9: Proposed SRF Loan and CIP to Spend

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Proposed SRF Loan	$3,529,000	$5,778,160	$17,660,627	$18,479,052	$0
% Acquisition	100%	100%	100%	100%	0%
CIP to Spend	100%	75%	75%	75%	75%

Table 3-10 displays the five-year financing plan. Grant funding (Line 3) consist of the Proposition 84 grant for the Desalter project, as projected by the District. Unfunded capital projects (Line 4) are a combination of the unfunded CIP line items for replacement projects (**Table 3-7**, Line 25) and acquisition projects (**Table 3-8**, Line 7). Debt funding (Line 5) consists of the proposed SRF loans for the Desalter project.

Table 3-10: Capital Financing Plan

		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**CIP Funding - Total**					
2	Rates	$2,388,000	$3,027,383	$1,946,065	$2,025,265	$3,141,019
3	Grant	$700,000	$700,000	$2,800,000	$2,800,000	$0
4	Unfunded	$0	$1,009,128	$1,657,816	$2,332,904	$3,126,441
5	Debt	$3,529,000	$5,778,160	$17,660,627	$18,479,052	$0
6	**Total**	**$6,617,000**	**$10,514,670**	**$24,064,508**	**$25,637,221**	**$6,267,460**
7	Total Funded CIP	$6,617,000	$9,505,543	$22,406,692	$23,304,317	$3,141,019

3.6 EXISTING AND PROPOSED DEBT

The District currently does not have any debt. The District plans on borrowing approximately $45.5M in SRF loans over the course of FY 2017 to 2020 to fund the Desalter project, as referenced in **Table 3-9**. The terms of the SRF loan are attractive at 2% for 20 years. **Table 3-11** shows the total proposed debt service over a five-year period. The Desalter project is expected to be completed in FY 2020, therefore, the debt service for the SRF loans will not begin until the following year in FY 2021.

Table 3-11: Proposed Debt Service

	Proposed Debt Service	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	SRF Loan	$0	$0	$0	$0	$2,779,380
2	**Total - Proposed Debt Service**	**$0**	**$0**	**$0**	**$0**	**$2,779,380**

3.7 PROPOSED REVENUE ADJUSTMENTS

The proposed revenue adjustments help ensure adequate revenue to fund operating expenses, capital expenditures, and reserve balances. The revenue adjustments occur on January 24, 2017 and in January for each following year. The proposed revenue adjustments and debt issue would enable the District to execute the CIP as shown in **Table 3-7** and **Table 3-8**.

Table 3-12 shows the proposed revenue adjustments selected by the District. The revenue adjustments are smoothed to avoid rate spikes. Although the following table shows anticipated revenue adjustments for the years following FY 2017, the District will review and confirm the needed revenue adjustments on a yearly basis. The rates presented in **Section 6** are based on this proposed financial plan.

Table 3-12: Proposed Revenue Adjustments

	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
Revenue Adjustments	9.5%	9.5%	9.5%	9.5%	6.0%
Debt Issue	$3,529,000	$5,778,160	$17,660,627	$18,479,052	$0
Capital Projects	$6,617,000	$9,505,543	$22,406,692	$23,304,317	$3,141,019

3.8 PROPOSED FINANCIAL PLAN

Table 3-13 displays the cash flow detail over the next five fiscal years. Lines 5-9 show the additional revenue from the revenue adjustments. Line 27 shows the net annual cash flow of the District.

Table 3-13: Proposed Five-Year Cash Flow

					FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Revenues**								
2	Water Sales				$15,113,000	$16,236,498	$16,397,698	$16,560,509	$16,724,949
3	Revenue Adjustments								
4	**Year**	**Effective**	**Month**	**% Adj.**					
5	FY 2017	5	February	9.5%	$598,223	$1,542,467	$1,557,781	$1,573,248	$1,588,870
6	FY 2018	6	January	9.5%		$771,234	$1,557,781	$1,573,248	$1,588,870
7	FY 2019	6	January	9.5%			$926,880	$1,872,166	$1,890,756
8	FY 2020	6	January	9.5%				$1,025,011	$2,070,377
9	FY 2021	6	January	6.0%					$715,915
10	**Total - Water Sales**				**$15,711,223**	**$18,550,199**	**$20,440,140**	**$22,604,182**	**$24,579,737**
11	Other O&M Revenues				$873,400	$882,134	$890,955	$899,865	$908,864
12	Investment Income				$7,700	($6,112)	($5,520)	($3,978)	$40,786
13	**Total - Revenues**				**$16,592,323**	**$19,426,221**	**$21,325,575**	**$23,500,069**	**$25,529,387**
14	**Revenue Requirements**								
15	O&M Expenses								
16	Water Supply Cost				$11,205,300	$12,645,387	$13,552,109	$14,523,682	$7,392,029
17	Water System Power				$624,700	$704,697	$747,278	$792,433	$840,316
18	Moorpark Desalter				$0	$0	$0	$0	$1,943,445
19	Other O&M Expenses				$5,122,400	$5,276,072	$5,434,354	$5,597,385	$5,765,306
20	Funded Depreciation				$801,300	$928,041	$1,226,796	$1,537,521	$1,579,401
21	**Total - Expenses**				**$17,753,700**	**$19,554,197**	**$20,960,537**	**$22,451,020**	**$17,520,497**
22	Debt Service								
23	Existing Debt Service				$0	$0	$0	$0	$0
24	Proposed Debt Service				$0	$0	$0	$0	$2,779,380
25	**Total - Debt Service**				**$0**	**$0**	**$0**	**$0**	**$2,779,380**
26	**Total - Revenue Requirements**				**$17,753,700**	**$19,554,197**	**$20,960,537**	**$22,451,020**	**$20,299,877**
27	**Net Annual Cash Flow**				**($1,161,377)**	**($127,976)**	**$365,037**	**$1,049,049**	**$5,229,510**

Table 3-14 displays the proforma statement, which shows the projected total revenue and expenses for the water utility for the Study period. Lines 27 through 29 shows the total beginning balances, ending balances, and proposed reserve targets. The proposed reserve targets consist of 25% of O&M expenses, 10% of rate revenue, and 2% of the net assets value. As depicted, the sum of the District's total reserves falls below the target for the entire Study period, which was a decision made by the District to minimize customer impacts. The total ending balances recover slightly in FY 2021 due to decreased water supply cost from Desalter production and decreased capital expenditures. The District is expected to meet the reserve target in FY 2024, which is beyond the scope of this Study period.

Reserves are part of a prudent financial management policy. A reserve policy provides a basis for the District to cash-fund working capital requirements, provides capital for projects, and copes with fiscal emergencies such as revenue shortfalls from droughts, asset failures, and natural disasters. It also

provides guidelines for sound financial management with an overall long-range perspective to maintain financial solvency and mitigate financial risks associated with revenue instability, volatile capital costs and emergencies. Additionally, adopting and adhering to a sustainable reserve policy enhances financial management transparency, which improves public confidence and elected officials' credibility and helps achieve or maintain a strong credit rating for future debt issues.

There are many types of reserves, and each reserve may serve a different purpose depending on the objectives and goals of the utility. The appropriate level of reserve and reserve type are impacted by a variety of different risk factors such as: the size of the operating budget, the amount of debt, the type of rate structure, billing frequency, the proximity and probability of a natural disaster, etc. While their specific components are unique, most reserves tend to fall into the following categories: operations & maintenance (cash flow), rate stabilization, capital replacement and refurbishment, and emergency. For this study, RFC recommends that the District maintain three reserves target, for purposes explained below:

- Operations and Maintenance: The purpose of an Operations and Maintenance Reserve is to provide working capital to support the operation, maintenance and administration of the water utility. From a risk management perspective, the cash flow reserve will support the utility's cash flow needs during normal operations and ensure that operations can continue should there be significant events that impact cash flow. As it is unlikely for a utility to perfectly predict its revenues and revenue requirements each month, setting aside a reserve to hedge the risk of monthly negative cash positions is prudent in financial planning. Operations & Maintenance reserves enable the utility to have some degree of flexibility in operating the Enterprise Fund.
- Rate Stabilization: While it is not customary for a utility to implement substantial rate increases in a short period of time, factors such as declining water sales and rapidly increasing water supply costs may necessitate large rate increases. In order to insulate customers from rate shock, rate stabilization reserves may be set up; this would smooth rate increases so that the utility may raise rates in a gradual manner rather than abruptly implementing large rate increases. Rate stabilization reserves act as a buffer to protect customers from large shifts in their bills.
- Capital Repair and Refurbishment: Capital Replacement and Refurbishment (R&R) reserves are similar to the Operations and Maintenance reserves in that a reserve is set up to assist with the cash flow requirements of funding R&R over a certain period of time. Water utilities are highly capital-intensive enterprises and the annual capital expenditure may significantly fluctuate. A utility can utilize an R&R reserve to ensure the proper amount of funding is available prior to awarding capital project contracts and assist with the timing adjustments of capital projects. The R&R reserve is funded by the funded depreciation (line 20 of **Table 3-13**). This provides some funding for future needs of the water system.

Table 3-14: Proforma Statement

		FY 2017	FY 2018	FY 2019	FY 2020	FY 2021
1	**Operating Revenues**					
2	Water Sales	$15,711,223	$18,550,199	$20,440,140	$22,604,182	$24,579,737
3	Other O&M Revenues	$873,400	$882,134	$890,955	$899,865	$908,864
4	Investment Income	$7,700	($6,112)	($5,520)	($3,978)	$40,786
5	**Subtotal - Operating Revenues**	**$16,592,323**	**$19,426,221**	**$21,325,575**	**$23,500,069**	**$25,529,387**
6	**Operating Expenses**					
7	Water Supply Cost	$11,205,300	$12,645,387	$13,552,109	$14,523,682	$7,392,029
8	Water System Power	$624,700	$704,697	$747,278	$792,433	$840,316
9	Moorpark Desalter	$0	$0	$0	$0	$1,943,445
10	Other O&M Expenses	$5,122,400	$5,276,072	$5,434,354	$5,597,385	$5,765,306
11	Funded Depreciation	$801,300	$928,041	$1,226,796	$1,537,521	$1,579,401
12	**Subtotal - Operating Expenses**	**$17,753,700**	**$19,554,197**	**$20,960,537**	**$22,451,020**	**$17,520,497**
13	**Net Operating Revenues**	**($1,161,377)**	**($127,976)**	**$365,037**	**$1,049,049**	**$8,008,890**
14	**Non-Operating Revenues**					
15	Capital Revenues	$75,000	$75,000	$75,000	$75,000	$75,000
16	Funded Depreciation	$801,300	$928,041	$1,226,796	$1,537,521	$1,579,401
17	Grant Funding	$700,000	$700,000	$2,800,000	$2,800,000	$0
18	Debt Proceeds	$3,529,000	$5,778,160	$17,660,627	$18,479,052	$0
19	Investment Income	$56,600	$29,072	$26,593	$19,885	$18,618
20	**Subtotal - Non-Operating Revenue**	**$5,161,900**	**$7,510,272**	**$21,789,017**	**$22,911,458**	**$1,673,019**
21	**Debt Service**					
22	Existing Debt Service	$0	$0	$0	$0	$0
23	Proposed Debt Service	$0	$0	$0	$0	$2,779,380
24	**Subtotal - Debt Service**	**$0**	**$0**	**$0**	**$0**	**$2,779,380**
25	**Capital Expenses - Funded Projects**	**$7,370,900**	**$10,289,599**	**$23,222,110**	**$24,152,352**	**$4,022,975**
26	**Net Revenues**	**($3,370,377)**	**($2,907,303)**	**($1,068,056)**	**($191,845)**	**$2,879,554**
27	Beginning Balance	$9,777,500	$6,407,123	$3,499,820	$2,431,765	$2,239,920
28	Ending Balance	$6,407,123	$3,499,820	$2,431,765	$2,239,920	$5,119,474
29	Total Proposed Targets	$6,866,729	$7,600,751	$8,141,330	$8,730,355	$8,390,125

The following set of figures displays the financial plan in graphical format for the five-year period. **Figure 3-1** shows the modeled revenue adjustments as green bars on the left axis. The District is setting rates for FY 2017, however, the revenue adjustments for FY 2018 and beyond will be evaluated on a yearly basis.

Figure 3-1: Proposed Revenue Adjustments

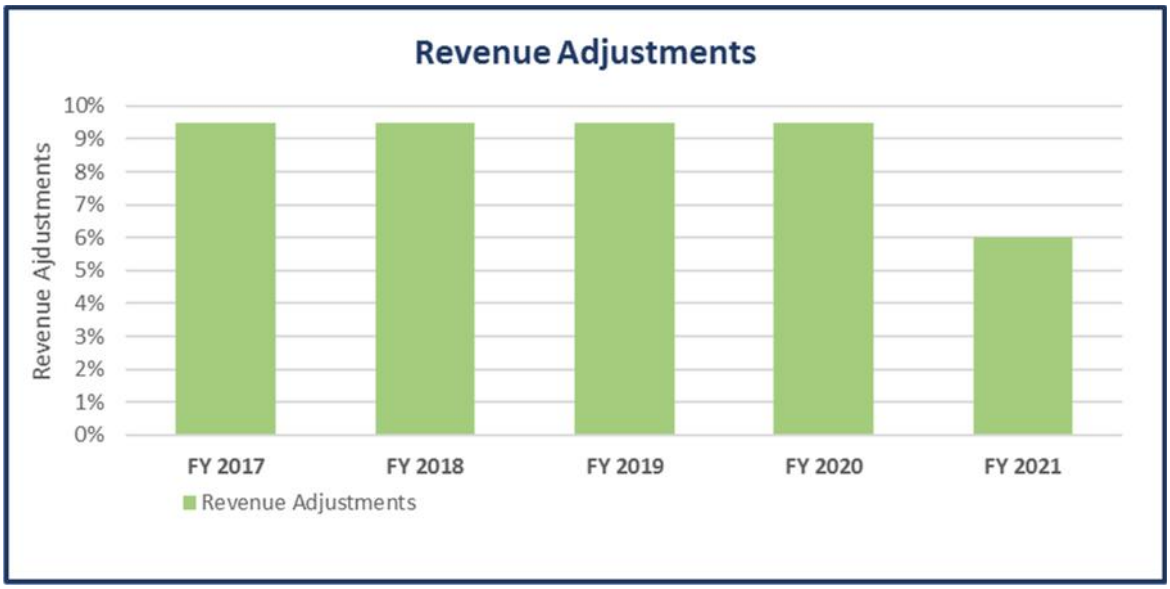


Figure 3-2 graphically depicts the O&M expenses of the District for the five-year period. The water supply cost makes up approximately 63-65% of the District's total expenses from FY 2017 to 2020. The Desalter project is expected to come online in FY 2021 and will produce water, thereby reducing the water supply cost expense.

Figure 3-2: Projected O&M Expenses

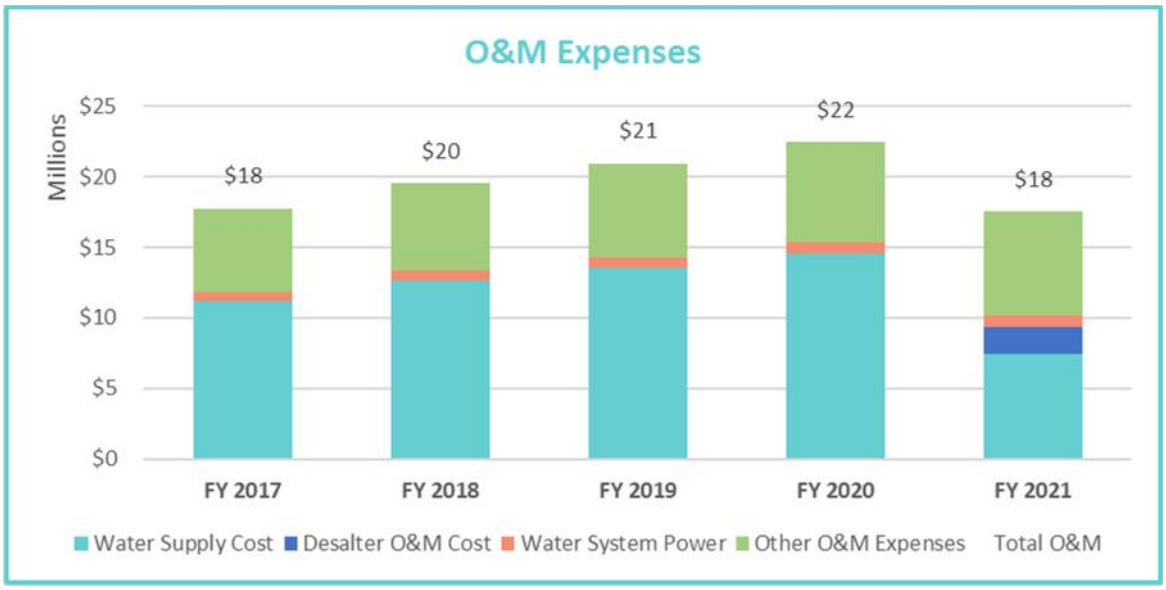


Figure 3-3 summarizes the projected CIP and its funding sources – debt, grant, or rate funded – and is a graphical depiction of the capital financing plan shown in **Table 3-10**. The unfunded portion of the CIP is not included in the graph.

Figure 3-3: Proposed Capital Financing Plan

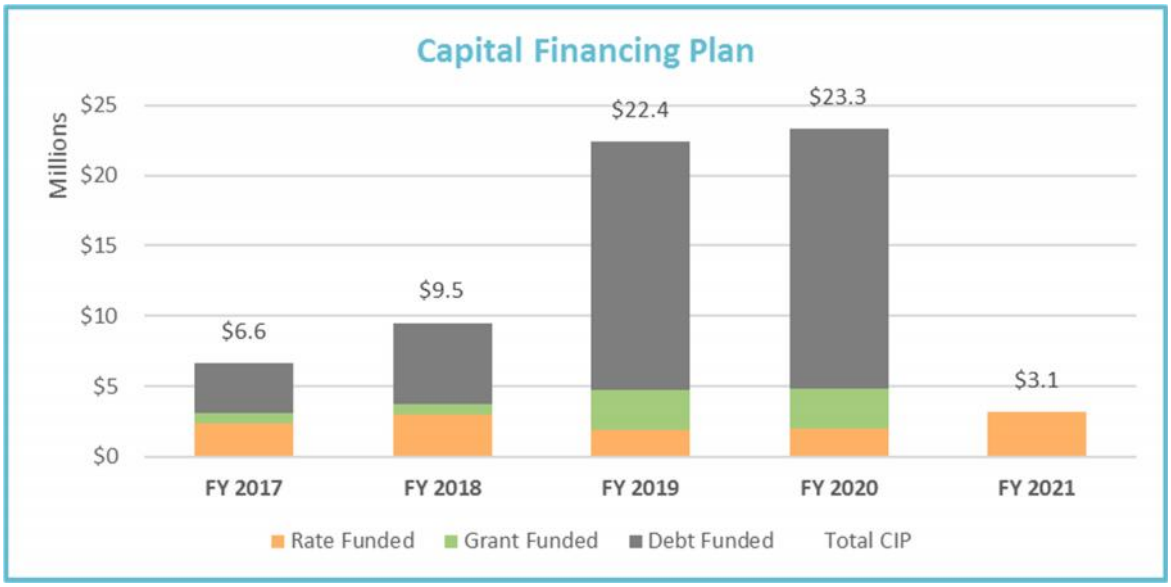


Figure 3-4 illustrates the operating financial plan by comparing the existing and proposed revenues with projected expenses. The expenses, shown in the stacked bars, include O&M expenses, debt service, and transfers to other funds. The current and proposed revenues are shown in the blue and green lines, respectively. Current revenue from existing rates does not meet projected future expenses and shows the need for revenue adjustments.

Figure 3-4: Proposed Operating Financial Plan

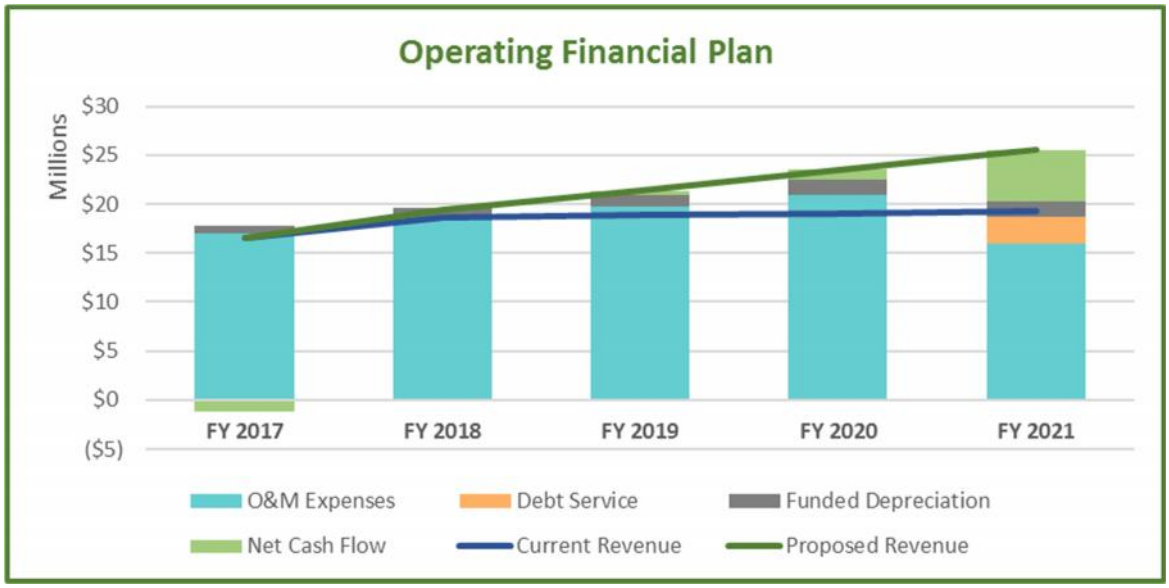
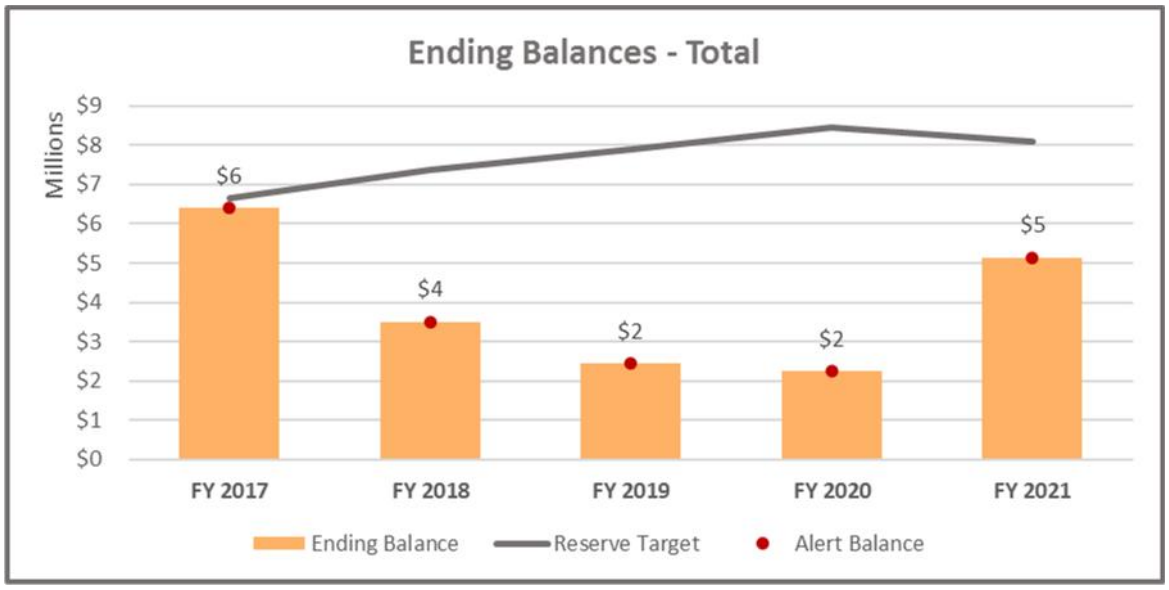


Figure 3-5 shows the projected annual ending balance for all of the District's funds/reserves and the total reserve target. As shown, the sum of all reserves fall below the target for the entire five-year period. This is a decision made by the District to minimize customer impacts. It is expected that the District would meet the reserve target in FY 2024, which is beyond the scope of this Study period. The total ending balances recover slightly in FY 2021 due to decreased O&M expenses and capital project expenditures. The total reserve target consists of 25% of annual O&M expenses, 10% of rate revenue, and 2% of net assets value.

Figure 3-5: Projected Total Ending Balances



4 LEGAL FRAMEWORK AND RATE SETTING METHODOLOGY

4.1 LEGAL FRAMEWORK[3]

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.

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 that rates are proportionate cost of providing water services.

California Constitution - Article X, Section 2
Article X, Section 2 of the California Constitution (established in 1976) states the following:

[3] 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 District should consult with its counsel for clarification and/or specific review of any of the above or other matters.

- "It is hereby declared that because of the conditions prevailing in this State the general welfare requires that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare."

As stated above Article X, section 2 of the State Constitution institutes the need to preserve the State's water supplies and to discourage the wasteful or unreasonable use of water by encouraging conservation. As such, public agencies are constitutionally mandated to maximize the beneficial use of water, prevent waste, and encourage conservation.

"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.

4.2 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 test year revenue requirement - 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 cost of providing water service is distributed among customer classes commensurate with their service requirements. A COS analysis involves the following:

1. Functionalizing costs. Examples of functions are supply, treatment, transmission, distribution, storage, meter servicing and customer billing and collection.
2. Allocating functionalized costs to cost causation components. Cost causation components include base, maximum day, maximum hour[4], meter service, customer servicing and conservation costs.

[4] Collectively, maximum day and maximum hour costs are known as peaking costs or capacity 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)[5]. 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. 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.

[5] 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.

5 COST OF SERVICE ANALYSIS

The principles and methodology of a COS analysis were described in **Section 4.2**. 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 O&M 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 do not serve a specific function

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
- Peaking costs (maximum day and maximum hour) – costs that are associated with meeting the peak demand in excess of the average rate of use
- Fire protection – costs that are associated with providing fire protection capacity
- 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

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[6] 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.

5.1 ALLOCATION OF FUNCTIONALIZED EXPENSES TO COST COMPONENTS

After functionalizing expenses, the next step is to allocate the functionalized expenses to cost causation components. To do so, we must identify system-wide peaking factors which are shown in **Table 5-1**. The system-wide peaking factors are used to derive the cost component allocation bases (i.e., percentages). Functionalized expenses are then allocated to the cost causation components using these allocation

[6] The terms extra capacity, peaking, and capacity costs are used interchangeably.

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 (Line 1).

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. Since facilities such as reservoirs and distribution systems are also designed to handle fire flow, an allocation is also provided for fire flow. The system Maximum Day and Maximum Hour factors provided by the District are 2.30 and 2.99, respectively. The Maximum Day with Fire (Line 2, Table 5-1) allocation is as follows:

- Base Delivery: 38% = (1.00/2.30) x 100 – 5% (1/2 of fire allocation)
- Maximum Day: 52% = (2.30-1.00)/2.30 x 100 – 5% (1/2 of fire allocation)
- Fire: 10%

Cost components such as those related to the distribution system that are designed for Maximum Hour with Fire (Line 3) peaks are allocated similarly. The allocation of Maximum Hour facilities is as follows:

- Base Delivery: 30% = (1.00/2.99) x 100 - 3.33% (1/3 of fire allocation)
- Maximum Day: 40% = (2.30-1.00)/2.99 x 100 - 3.33% (1/3 of fire allocation)
- Maximum Hour: 20% = (2.99-2.30)/2.99 x 100 - 3.33% (1/3 of fire allocation)
- Fire: 10%

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. Since there are costs within the utility that are related to meeting peak capacities but not providing fire protection services, lines 5 and 6 show the Maximum Day and Maximum Hour cost components without Fire.

Table 5-1: System-Wide Peaking Factors and Allocation to Cost Causation Components

		Factor	Base Delivery	Max Day	Max Hour	Fire	Total
1	Base	1.00	100%	0%	0%	0%	100%
2	Max Day w/ Fire	2.30	38%	52%	0%	10%	100%
3	Max Hour w/ Fire	2.99	30%	40%	20%	10%	100%
4	Average w/ Fire		34%	46%	10%	10%	100%
5	Max Day w/o Fire		43%	57%	0%	0%	100%
6	Max Hour w/o Fire		33%	43%	23%	0%	100%
7	Average w/o Fire		38%	50%	12%	0%	100%

Table 5-2 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 peaking 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 ration of the system peaking factors and applying them to the peaking factor for the different classes shown in **Table 5-2**.

Table 5-2: Peaking Factors by Customer Class

Customer Specific	Proposed Tiers	Max Monthly	Average Monthly	Peaking Factor
Residential		271,500	178,409	1.52
Tier 1	10	89,008	82,974	1.07
Tier 2	25	86,053	51,631	1.67
Tier 3	>25	96,439	43,805	2.20
Residential Non-Tiered		24,504	14,031	1.75
Residential Multi Family		19,832	15,865	1.25
Commercial		60,279	39,786	1.52
Agricultural		142,012	83,662	1.70
Industrial		6,797	5,208	1.31
Institutional		52,132	26,884	1.94
Temporary Construction		3,022	1,020	2.96

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 expense 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 ¾" 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 5-3** shows the equivalent meters for FY 2017.

Table 5-3: Equivalent Meters (FY 2017)

Meter Size	Capacity (gpm)	AWWA Ratio	Number of Meters	Equivalent Meters
3/4"	30	1.00	8,646	8,646
1"	50	1.67	1,386	2,310
1 1/2"	100	3.33	356	1,187
2"	160	5.33	318	1,696
3"	350	11.67	93	1,085
4"	630	21.00	24	504
6"	1,300	43.33	1	43
TOTAL			**10,824**	**15,471**

Similar in concept to equivalent meters, a fire line ratio is used to determine equivalent private and public fire lines. The method of calculation for the fire line ratios are provided in the AWWA M1 Manual. Equivalent fire lines are used in calculating private fire line charges.

To calculate the equivalent lines for private fire service, the number of lines is multiplied by a fire line ratio for the corresponding line size using a 6" line as the base. For example, a 2" private fire line has a fire line ratio of $(2/6)^{2.63}$ or 0.06, which is the size of the fire line divided by 6 to the power of 2.63. Similarly, the fire line ratio of the 10" private fire line is $(10/6)^{2.63}$ or 3.83. The number of equivalent private fire lines is shown in **Table 5-4**.

Table 5-4: Equivalent Private Fire Lines (FY 2017)

Line Size	Fire Ratio	Number of Lines	Equivalent Lines
2"	0.06	9	1
3"	0.16	0	0
4"	0.34	116	40
6"	1.00	51	51
8"	2.13	54	115
10"	3.83	16	61
20"	23.72	1	24
Total		**247**	**292**

The fire line ratio for public hydrants is calculated similarly to that of the private fire lines. Hydrants have multiple outlets and the capacity of each hydrant is based on the size and number of outlets. For example, a hydrant with a 2.5" and 4" outlet, has a fire line ratio of $(2.5/6)^{2.63} + (4/6)^{2.63}$ or 0.44. The number of equivalent public hydrants is shown in **Table 5-5**.

Table 5-5: Equivalent Public Hydrants (FY 2017)

Line Size	Fire Ratio	Number of Lines	Equivalent Lines
2.5"	0.10	108	11
2.5 x 2.5"	0.20	70	14
2.5 x 4"	0.44	559	248
2.5 x 2.5 x 4"	0.54	25	14
2.5 x 4 x 4"	0.79	17	13
Total		**779**	**300**

Table 5-6 allocates the O&M expenses to each cost causation component. The functional costs, which are represented by each expense line item of the District's budget, are allocated according to industry standards based on the nature of the water function. For example, water supply and production costs are allocation fully to the Supply component. Treatment costs are allocated on the basis of Maximum Day. 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 5-7** shows the total resulting cost causation component allocation for the District's O&M expenses. This resulting allocation is used to allocate the District's operating revenue requirement to the cost causation components.

Table 5-8 shows the allocation of the District'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 District's assets and then allocated the assets to the cost causation components resulting in the total asset allocation shown in **Table 5-9**.

Table 5-6 through **Table 5-13** are reproduced in the Appendix for better legibility.

Table 5-6: O&M Expenses Percentage Allocation

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Voice Data Isf								100%	100%
Radio Communications Isf								100%	100%
General Insurance Allocation Isf								100%	100%
Equipment Maintenance		34%	46%	10%	10%			0%	100%
Equipment Maintenance Contracts		34%	46%	10%	10%			0%	100%
Maintenance Supplies		34%	46%	10%	10%			0%	100%
Water System Maintenance Supply		34%	46%	10%	10%			0%	100%
Buildings And Improvements Maintenance								100%	100%
Other Buildings And Improvements Maintenance								100%	100%
Memberships And Dues								100%	100%
Cost Allocation Plan Charges								100%	100%
Miscellaneous Expense								100%	100%
Cross Connection Fees								100%	100%
Federal State Permits And Fees								100%	100%
Conservation Program	100%							0%	100%
Printing And Binding Non Isf							100%	0%	100%
Mail Center Isf							100%	0%	100%
Purchasing Charges Isf								100%	100%
Graphics Charges Isf							100%	0%	100%
Engineering And Technical Surveys	17%	24%	31%	7%	7%	5%	0%	10%	100%
Refuse Disposal								100%	100%
Attorney Services								100%	100%
Lab Services		100%						0%	100%
Collection And Billing Services							100%	0%	100%
Other Professional And Specialized Non Isf								100%	100%
Information Technology Isf								100%	100%
County Geographical Information Systems Expense Isf								100%	100%
Management And Admin Survey Isf								100%	100%
Public Works Isf Charges		33%	43%	8%	2%		15%	0%	100%
Professional And Specialized Services Isf								100%	100%
Publications And Legal Notices							100%	0%	100%
Rent And Leases Equipment Noncounty Owned								100%	100%
Computer Equipment <5000								100%	100%
Furniture And Fixtures <5000								100%	100%
Small Tools And Instruments								100%	100%
Minor Equipment								100%	100%
Meter Purchases						100%		0%	100%
Transportation Charges Isf								100%	100%
Transportation Work Order								100%	100%
Groundwater Extraction	100%							0%	100%
Water Supply Cost	100%							0%	100%
Capacity Reservation Charge (CRC)		43%	57%					0%	100%
MWD RTS Charge		43%	57%					0%	100%
Water And Sewer System Power	100%							0%	100%
Moorpark Desalter - Power	100%							0%	100%
Moorpark Desalter - Labor	100%							0%	100%
Moorpark Desalter - Chemical	100%							0%	100%
Moorpark Desalter - Maintenance	100%							0%	100%
Moorpark Desalter - Membrane Replacement	100%							0%	100%
Moorpark Desalter - Brine Disposal	100%							0%	100%
Contributions To Other Funds								100%	100%
Funded Depreciation	17%	24%	31%	7%	7%	5%	0%	10%	100%

Table 5-7: Total O&M Expenses Allocation by Cost Causation Component

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Voice Data Isf	$0	$0	$0	$0	$0	$0	$0	$8,300	$8,300
Radio Communications Isf	$0	$0	$0	$0	$0	$0	$0	$0	$0
General Insurance Allocation Isf	$0	$0	$0	$0	$0	$0	$0	$30,700	$30,700
Equipment Maintenance	$0	$2,058	$2,750	$592	$600	$0	$0	$0	$6,000
Equipment Maintenance Contracts	$0	$119,346	$159,500	$34,354	$34,800	$0	$0	$0	$348,000
Maintenance Supplies	$0	$78,878	$105,417	$22,705	$23,000	$0	$0	$0	$230,000
Water System Maintenance Supply	$0	$37,724	$50,417	$10,859	$11,000	$0	$0	$0	$110,000
Buildings And Improvements Maintenance	$0	$0	$0	$0	$0	$0	$0	$75,000	$75,000
Other Buildings And Improvements Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0
Memberships And Dues	$0	$0	$0	$0	$0	$0	$0	$9,600	$9,600
Cost Allocation Plan Charges	$0	$0	$0	$0	$0	$0	$0	$17,900	$17,900
Miscellaneous Expense	$0	$0	$0	$0	$0	$0	$0	$10,000	$10,000
Cross Connection Fees	$0	$0	$0	$0	$0	$0	$0	$18,900	$18,900
Federal State Permits And Fees	$0	$0	$0	$0	$0	$0	$0	$25,900	$25,900
Conservation Program	$4,000	$0	$0	$0	$0	$0	$0	$0	$4,000
Printing And Binding Non Isf	$0	$0	$0	$0	$0	$0	$2,000	$0	$2,000
Mail Center Isf	$0	$0	$0	$0	$0	$0	$76,800	$0	$76,800
Purchasing Charges Isf	$0	$0	$0	$0	$0	$0	$0	$23,000	$23,000
Graphics Charges Isf	$0	$0	$0	$0	$0	$0	$60,400	$0	$60,400
Engineering And Technical Surveys	$18,489	$25,975	$34,571	$8,177	$7,313	$4,982	$0	$10,492	$110,000
Refuse Disposal	$0	$0	$0	$0	$0	$0	$0	$1,000	$1,000
Attorney Services	$0	$0	$0	$0	$0	$0	$0	$22,900	$22,900
Lab Services	$0	$29,000	$0	$0	$0	$0	$0	$0	$29,000
Collection And Billing Services	$0	$0	$0	$0	$0	$0	$105,500	$0	$105,500
Other Professional And Specialized Non Isf	$0	$0	$0	$0	$0	$0	$0	$92,100	$92,100
Information Technology Isf	$0	$0	$0	$0	$0	$0	$0	$0	$0
County Geographical Information Systems Expense Isf	$0	$0	$0	$0	$0	$0	$0	$800	$800
Management And Admin Survey Isf	$0	$0	$0	$0	$0	$0	$0	$230,900	$230,900
Public Works Isf Charges	$0	$939,026	$1,227,158	$232,268	$42,830	$0	$414,019	$0	$2,855,300
Professional And Specialized Services Isf	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Publications And Legal Notices	$0	$0	$0	$0	$0	$0	$800	$0	$800
Rent And Leases Equipment Noncounty Owned	$0	$0	$0	$0	$0	$0	$0	$12,000	$12,000
Computer Equipment <5000	$0	$0	$0	$0	$0	$0	$0	$10,500	$10,500
Furniture And Fixtures <5000	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Small Tools And Instruments	$0	$0	$0	$0	$0	$0	$0	$0	$0
Minor Equipment	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Meter Purchases	$0	$0	$0	$0	$0	$495,000	$0	$0	$495,000
Transportation Charges Isf	$0	$0	$0	$0	$0	$0	$0	$8,900	$8,900
Transportation Work Order	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Groundwater Extraction	$17,500	$0	$0	$0	$0	$0	$0	$0	$17,500
Water Supply Cost	$10,193,040	$0	$0	$0	$0	$0	$0	$0	$10,193,040
Capacity Reservation Charge (CRC)	$0	$147,442	$191,674	$0	$0	$0	$0	$0	$339,116
MWD RTS Charge	$0	$285,063	$370,581	$0	$0	$0	$0	$0	$655,644
Water And Sewer System Power	$624,700	$0	$0	$0	$0	$0	$0	$0	$624,700
Moorpark Desalter - Power	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Chemical	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Membrane Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Brine Disposal	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contributions To Other Funds	$0	$0	$0	$0	$0	$0	$0	$83,200	$83,200
Funded Depreciation	$134,683	$189,217	$251,838	$59,567	$53,270	$36,293	$0	$76,432	$801,300
TOTAL O&M EXPENSES	**$10,992,412**	**$1,853,729**	**$2,393,906**	**$368,522**	**$172,812**	**$536,275**	**$659,519**	**$776,525**	**$17,753,700**
O&M Expenses Allocation	62%	10%	13%	2%	1%	3%	4%	4%	100%

Table 5-8: Capital Assets Percentage Allocation

Capital Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
General Assets								100%	100%
Treatment Plant and Related Assets		43%	57%						100%
Distribution		27%	36%	18%	10%	10%			100%
Storage		38%	52%	0%	10%				100%
Source of Supply (Well)	100%								100%
Meters						100%			100%
Pump Stations	100%								100%
Transmission		43%	57%						100%
Firelines/Hydrants					100%				100%

Table 5-9: Total Capital Assets Allocation by Cost Causation Component

Capital Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
General Assets	$0	$0	$0	$0	$0	$0	$0	$4,088,128	$4,088,128
Treatment Plant and Related Assets	$0	$968,405	$1,258,927	$0	$0	$0	$0	$0	$2,227,332
Distribution	$0	$4,859,170	$6,478,294	$3,186,076	$1,815,442	$1,815,442	$0	$0	$18,154,424
Storage	$0	$3,894,440	$5,214,588	$0	$1,012,114	$0	$0	$0	$10,121,142
Source of Supply (Well)	$5,799,579	$0	$0	$0	$0	$0	$0	$0	$5,799,579
Meters	$0	$0	$0	$0	$0	$125,766	$0	$0	$125,766
Pump Stations	$1,404,209	$0	$0	$0	$0	$0	$0	$0	$1,404,209
Transmission	$0	$398,628	$518,217	$0	$0	$0	$0	$0	$916,846
Firelines/Hydrants	$0	$0	$0	$0	$21,668	$0	$0	$0	$21,668
TOTAL ASSETS	**$7,203,788**	**$10,120,643**	**$13,470,026**	**$3,186,076**	**$2,849,225**	**$1,941,208**	**$0**	**$4,088,128**	**$42,859,094**
Assets Allocation	17%	24%	31%	7%	7%	5%	0%	10%	100%

5.2 REVENUE REQUIREMENT DETERMINATION

Table 5-10 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 5-7** and **Table 5-9**.

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 5-10: Revenue Requirement Determination

		FY 2017		
		Operating	**Capital**	**Total**
1	**Revenue Requirements**			
2	O&M Expenses			
3	Water Supply Cost	$11,205,300		$11,205,300
4	Water System Power	$624,700		$624,700
5	Moorpark Desalter	$0		$0
6	Other O&M Expenses	$5,122,400		$5,122,400
7	Funded Depreciation		$801,300	$801,300
8	Existing Debt Service		$0	$0
9	Proposed Debt Service		$0	$0
10	**Total Revenue Requirements**	**$16,952,400**	**$801,300**	**$17,753,700**
11	**Less: Revenue Offsets**			
12	Other O&M Revenues	$873,400		$873,400
13	Investment Income	$7,700		$7,700
14	**Total Revenue Offsets**	**$881,100**	**$0**	**$881,100**
15	**Less: Adjustments**			
16	Adjustment for Cash Balance	$1,161,377		$1,161,377
17	Adjustment for Midyear Increase	($837,512)		($837,512)
18	**Total Adjustments**	**$323,865**	**$0**	**$323,865**
19	**Revenue Requirement from Rates**	**$15,747,435**	**$801,300**	**$16,548,735**

5.3 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 demanded by each class for each cost causation component. In order to determine the units demanded by each customer class, the peaking factors in **Table 5-2**, and the equivalent meters and fire lines from **Table 5-3**, **Table 5-4**, and **Table 5-5** are utilized. This process is summarized in **Table 5-11**.

Table 5-11: Derivation of Cost Causation Component Units

				Maximum Day Requirements			Maximum Hour Requirements				
	Monthly Tiers (hcf)	Annual Use (hcf)	Average Daily Use (hcf/day)	Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	Capacity Factor	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	No. of Meters (Equiv.)	No. of Bills (No.)
Residential		1,987,658	5,446	1.52	8,287	2,841	1.98	10,773	2,486	11,970	120,828
Tier 1	10	868,786	2,380	1.07	2,553	173	1.39	3,319	766		
Tier 2	25	548,943	1,504	1.67	2,507	1,003	2.17	3,259	752		
Tier 3	>25	569,929	1,561	2.20	3,438	1,876	2.86	4,469	1,031		
Residential Non-Tiered		145,958	400	1.75	698	298	2.27	908	210		
Residential Multi Family		189,887	520	1.25	650	130	1.63	845	195	516	1,548
Commercial		337,803	925	1.52	1,402	477	1.97	1,823	421	682	2,712
Agricultural		921,901	2,526	1.70	4,287	1,762	2.21	5,574	1,286	1,463	1,872
Industrial		57,752	158	1.31	207	48	1.70	268	62	171	768
Institutional		248,412	681	1.94	1,320	639	2.52	1,716	396	669	2,160
Temporary Construction		30,218	83	2.96	245	162	3.85	319	74		
Private Fire Service										292	2,964
TOTAL		**3,919,588**	**10,739**		**17,307**	**6,569**		**22,500**	**5,192**	**15,763**	**132,852**

Table 5-12 shows the cost causation component unit cost derivation. The operating revenue requirement (**Table 5-12**, Line 1) derived from **Table 5-10** is allocated to the cost causation components using the resulting O&M allocation from **Table 5-7**. Similarly, the capital revenue requirement (**Table 5-12**, Line 2) derived from **Table 5-10** is allocated to the cost causation components using the resulting capital asset allocation from **Table 5-9**. 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 (Line 4), excluding Supply.

The Fire cost component (Line 5) represents both public and private fire protection costs and is allocated proportionally to the number of equivalent lines for private and public fire protection. Public fire protection (i.e. hydrants) costs are related to the capacity of water system that is allocated to providing fire protection, not the actual costs of putting out fires. This accounts for 51% (derived from **Table 5-4** and **Table 5-5**) of the total Fire cost component and that portion of the cost ($118,371 or 51% of $233,348) is allocated to the Meter cost component as it represents the fixed public fire protection benefit to all customers. The remaining amount of the Fire cost component represents the private fire protection costs.

To provide revenue stability for the District, a portion of the peaking costs (Line 6) are allocated to the meter component in order to collect approximately 10% of the District's total revenue from the fixed charges. The total adjusted cost of service is divided by the units of service to calculate the unit cost. For example, the unit cost for the base component is dividing the total base cost by total water use in hcf. The unit costs are used to distribute the cost causation components to the customer classes.

Table 5-12: Unit Cost Calculation

		Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
1	Operating Expenses	$9,750,209	$1,644,248	$2,123,382	$326,877	$153,283	$475,673	$584,989	$688,773	$15,747,435
2	Capital Expenses	$134,683	$189,217	$251,838	$59,567	$53,270	$36,293	$0	$76,432	$801,300
3	**Total Cost of Service**	**$9,884,892**	**$1,833,465**	**$2,375,220**	**$386,445**	**$206,553**	**$511,966**	**$584,989**	**$765,205**	**$16,548,735**
4	Allocation of General Cost		$237,848	$308,127	$50,132	$26,795	$66,415	$75,888	($765,205)	$0
5	Allocation of Public Fire Protection Cost					($118,371)	$118,371			$0
6	Allocation of Peaking Cost to Meter			($268,335)	($43,658)		$311,992			$0
7	**Total Adjusted Cost of Service**	**$9,884,892**	**$2,071,312**	**$2,415,012**	**$392,919**	**$114,976**	**$1,008,745**	**$660,878**	**$0**	**$16,548,735**
8	Unit of Service	3,919,588	3,919,588	6,569	5,192	3,499	185,652	132,852		
9	Unit	hcf	hcf	hcf/day	hcf/day	equiv. meter/yr	equiv. meter/yr	bills/yr		
10	Unit Cost	$2.52	$0.53	$367.65	$75.67	$32.86	$5.43	$4.97		
11	Unit	hcf	hcf	hcf/day	hcf/day	equiv. meter/mo	equiv. meter/mo	bills/mo		

5.4 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 5-12** to arrive at the cost to serve each customer class. **Table 5-13** shows the derivation of the cost to serve (i.e., cost of service for) each customer class. The Supply, Base Delivery, Maximum Day, and Maximum Hour cost components are collected through Commodity Rates ($/hcf) for potable water. The Fire cost component is collected through monthly Private Fire Line Charges. The Meter and Customer cost components are collected through the District's monthly Meter Service Charges. The proposed proportion of fixed revenue remains the same as the current proportion at approximately 10% and is designed to increase at 1% every following year in order to increase revenue stability.

To derive the cost to serve each customer class, the unit costs from **Table 5-12** are multiplied by the units shown in **Table 5-11** for each class. For example, the Supply costs for Tier 1 of the Residential class is calculated by multiplying the Supply unit cost ($2.52 per hcf) by the annual Residential usage for that tier (868,786 hcf) to determine the total annual cost of providing water supply to that tier ($2,190,842). Similarly, the Customer costs are derived by multiplying the Customer unit cost ($4.97 per bill) by the number of bills for the Residential class (120,828 bills) to determine the total annual cost of providing customer service to that class ($601,064). Note that the total cost of service (Line 13) is equal to the total revenue requirement (**Table 5-10**, Line 19) as intended.

Table 5-13: Allocation of Cost to Customer Class

		Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
1	Residential	$5,012,330	$1,050,300	$1,121,787	$192,889	$0	$780,472	$601,064		$8,758,842
2	Tier 1	$2,190,842	$459,076	$63,621	$57,959					
3	Tier 2	$1,384,284	$290,067	$368,553	$56,899					
4	Tier 3	$1,437,204	$301,156	$689,612	$78,032					
5	Residential Non-Tiered	$368,065	$77,126	$109,713	$15,853					$570,756
6	Residential Multi Family	$478,842	$100,338	$47,819	$14,762		$33,666	$7,701		$683,128
7	Commercial	$851,847	$178,499	$175,220	$31,829		$44,446	$13,491		$1,295,331
8	Agricultural	$2,324,783	$487,143	$647,484	$97,319		$95,391	$9,312		$3,661,431
9	Industrial	$145,635	$30,517	$17,745	$4,687		$11,128	$3,820		$213,533
10	Institutional	$626,427	$131,263	$234,928	$29,957		$43,642	$10,745		$1,076,962
11	Temporary Construction	$76,964	$16,127	$60,316	$5,623		$0	$0		$159,031
12	Private Fire Service					$114,976		$14,745		$129,721
	TOTAL	**$9,884,892**	**$2,071,312**	**$2,415,012**	**$392,919**	**$114,976**	**$1,008,745**	**$660,878**	**$0**	**$16,548,735**

6 RATE DERIVATION

The last step in the COS study is the rate design and rate derivation. In this step, we have some flexibility to design rates to meet District 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.

6.1 DERIVATION OF MONTHLY SERVICE CHARGES

Table 6-1 shows the derivation of the monthly service charges. The COS analysis derived in **Table 5-13** 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/Billing" columns of **Table 5-13**.

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 District incurs fixed costs in connection with the maintenance of the meters, 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 6-1**. The ratios depict the potential flow through each meter size compared to the flow through a ¾" meter, which is the base meter size for this Study. For example, the flow through a 2" meter is approximately 5.33 times that of a ¾" meter. The meter capacity component for a ¾" meter is equal to the unit cost per equivalent meter derived in the "Meter" column of **Table 5-12**. 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 6-1**. For example, the 2" meter has a meter ratio of 5.33 and therefore has a meter capacity component of $28.98 ($5.43 x 5.33).

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/Billing" column of **Table 6-1** and is equal to the Customer unit cost as calculated in **Table 5-12**.

Table 6-1: Derivation of Proposed Monthly Service Charges

Meter Size	Meter Ratio	Meter	Customer/ Billing	Proposed Monthly Charges
3/4"	1.00	$5.43	$4.97	**$10.41**
1"	1.67	$9.06	$4.97	**$14.04**
1 1/2"	3.33	$18.11	$4.97	**$23.09**
2"	5.33	$28.98	$4.97	**$33.96**
3"	11.67	$63.39	$4.97	**$68.37**
4"	21.00	$114.10	$4.97	**$119.08**
6"	43.33	$235.45	$4.97	**$240.43**

6.2 DERIVATION OF PROPOSED MONTHLY PRIVATE FIRE LINE CHARGES

Table 6-2 shows the derivation of the monthly private fire line charges. The COS analysis derived in **Table 5-13** and the unit costs calculated in **Table 5-12** are utilized in determining the monthly private fire line charges. These charges are designed to collect the amount of revenue shown in the "Fire" and "Customer/Billing" columns of the Private Fire Service customer class (**Table 5-13**, Line 12).

Similar to the monthly service charges, the monthly private fire line charges consist of two components: fire capacity and customer service. The fire capacity component is derived by multiplying the unit cost of Fire (**Table 5-12**, Line 10) by the fire line ratios in the "Fire Ratio" column of **Table 6-2**. For example, the fire capacity component for a 4" fire line is determined by multiplying the corresponding fire line ratio (0.34) the unit cost related to Fire ($32.86). The resulting fire capacity component for a 4" fire line is $11.31. The customer/billing component utilizes the same method as that of the monthly service charges.

Table 6-2: Derivation of Proposed Monthly Private Fire Line Charges

Line Size	Fire Ratio	Fire	Customer/ Billing	Proposed Monthly Charges
2"	0.06	$1.83	$4.97	**$6.81**
3"	0.16	$5.31	$4.97	**$10.29**
4"	0.34	$11.31	$4.97	**$16.29**
6"	1.00	$32.86	$4.97	**$37.84**
8"	2.13	$70.03	$4.97	**$75.01**
10"	3.83	$125.94	$4.97	**$130.92**
20"	23.72	$779.63	$4.97	**$784.60**

6.3 DERIVATION OF PROPOSED COMMODITY RATES

The proposed rate structure includes three tiers for the Residential customer class. The proposed tiers are as follows:

- Tier 1 (0-10 hcf per month): this represents the average indoor usage for Residential customers. This allocation represents sufficient indoor water usage assuming an average residential family of

4 people per household using 60 gallons per person per day. The AWWA has identified that indoor water usage needs equate to 60 gallons per person per day.

- Tier 2 (>10-25 hcf per month): this represents the average summer usage for Residential customers in FY 2015. This allocation is representative of sufficient outdoor water for an average Residential customer.
- Tier 3 (over 25 hcf per month): this represents any usage that falls above the average indoor and outdoor water usage for the average Residential customer.

All other customer classes, including Residential Non-Tiered, Residential Multi-Family, Commercial, Agricultural, Industrial, Institutional, and Temporary Construction, have a uniform rate structure.

The commodity rates for each class and tier are derived by adding the unit rates ($/hcf) for three cost causation components: Supply, Base Delivery, and Peaking (Maximum Day and Maximum Hour).

Supply costs are costs related to the cost of purchasing and producing water. The District has two sources of water: groundwater and imported water from the Calleguas Municipal Water District. RFC recommends that each source of supply be allocated evenly across all customer classes proportionately to their percentage of total water usage. Thus, since all supply costs are allocated evenly, all customer classes and tiers have the same Supply unit cost. Based on **Table 5-12**, the Supply unit cost is $2.52 per hcf.

Sources	Groundwater	Imported	Total
Available Supply (hcf)	716,177	3,203,411	3,919,588
Cost	$536,608	$9,348,284	$9,884,892
Unit cost ($/hcf)	$0.75	$2.92	$2.52

Based on the District's request, RFC calculated an alternate scenario in which a percentage of the groundwater supply is allocated to agriculture customers. The District's analysis of groundwater usage indicates that agricultural customers use approximately 50% of the total groundwater supply. Thus, in this alternate scenario, 50% of the groundwater supply is allocated to agricultural customers (50% of 716,177 hcf). The remaining 50% is allocated to the other customer classes in proportion to their total water usage. Usage that is not met by groundwater supply is met by imported water. **Table 6-3** shows the supply unit cost derivation of this alternate scenario for each customer class, by multiplying the unit cost for each source of supply by the quantity of supply allocated to each customer class.

Table 6-3: District's Alternate Scenario Supply Cost Calculation

Customer	Usage (hcf)	Groundwater	Imported	Total	Unit Cost
Residential	1,987,658	237,435	1,750,222	1,987,658	$2.66
Residential Non-Tiered	145,958	17,435	128,522	145,958	$2.66
Residential Multi Family	189,887	22,683	167,204	189,887	$2.66
Commercial	337,803	40,352	297,451	337,803	$2.66
Agricultural	921,901	358,088	563,813	921,901	$2.08
Industrial	57,752	6,899	50,853	57,752	$2.66
Institutional	248,412	29,674	218,738	248,412	$2.66
Temporary Construction	30,218	3,610	26,608	30,218	$2.66
TOTAL	**3,919,588**	**716,177**	**3,203,411**	**3,919,588**	**$2.52**

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 divided between all units of water irrespective of customer classes or tiers. Based on **Table 5-12**, the Base Delivery unit cost is $0.53 per hcf.

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 demands. The Peaking costs are distributed to each tier and class using peaking factors derived from customer use data, as shown in **Table 5-2**. The total Peaking costs for each customer class and tier are equal to the sum of the Maximum Day and Maximum Hour cost components calculated in **Table 5-13**. The Peaking unit cost is determined by dividing the total Peaking cost for each customer class and tier by the corresponding usage (hcf). **Table 6-4** shows the Peaking unit cost derivation for each customer class and tier.

Table 6-4: Peaking Cost Calculation

Customer	Monthly Tier (hcf)	Peaking Costs	Usage (hcf)	Unit Cost
Residential				
Tier 1	10	$121,580	868,786	$0.14
Tier 2	25	$425,453	548,943	$0.78
Tier 3	>25	$767,644	569,929	$1.35
Residential Non-Tiered		$125,566	145,958	$0.86
Residential Multi Family		$62,581	189,887	$0.33
Commercial		$207,049	337,803	$0.61
Agricultural		$744,803	921,901	$0.81
Industrial		$22,433	57,752	$0.39
Institutional		$264,885	248,412	$1.07
Temporary Construction		$65,939	30,520	$2.16

Table 6-5 shows RFC's recommended commodity rates for each customer class, which is the combination of the three aforementioned cost components: Supply, Base Delivery, and Peaking.

Table 6-5: Derivation of RFC Recommended Commodity Rates[7]

Customer Class	Monthly Tier (hcf)	Usage (hcf)	Supply	Base Delivery	Peaking	Total Rate
Residential						
Tier 1	10	868,786	$2.52	$0.53	$0.14	**$3.20**
Tier 2	25	548,943	$2.52	$0.53	$0.78	**$3.83**
Tier 3	>25	569,929	$2.52	$0.53	$1.35	**$4.40**
Residential Non-Tiered		145,958	$2.52	$0.53	$0.86	**$3.92**
Residential Multi Family		189,887	$2.52	$0.53	$0.33	**$3.39**
Commercial		337,803	$2.52	$0.53	$0.61	**$3.67**
Agricultural		921,901	$2.52	$0.53	$0.81	**$3.86**
Industrial		57,752	$2.52	$0.53	$0.39	**$3.44**
Institutional		248,412	$2.52	$0.53	$1.07	**$4.12**
Temporary Construction		30,218	$2.52	$0.53	$2.16	**$5.22**

Table 6-6 shows the District's alternate scenario commodity rates for each customer class and tier, based on the groundwater usage analysis, using the Supply unit cost shown in **Table 6-4**. The Base Delivery and Peaking components remain the same as RFC's recommended rates.

Table 6-6: Derivation of District's Alternate Scenario Commodity Rates[8]

Customer Class	Monthly Tier (hcf)	Usage (hcf)	Supply	Base Delivery	Peaking	Total Rate
Residential						
Tier 1	10	868,786	$2.66	$0.53	$0.14	**$3.33**
Tier 2	25	548,943	$2.66	$0.53	$0.78	**$3.97**
Tier 3	>25	569,929	$2.66	$0.53	$1.35	**$4.54**
Residential Non-Tiered		145,958	$2.66	$0.53	$0.86	**$4.05**
Residential Multi Family		189,887	$2.66	$0.53	$0.33	**$3.52**
Commercial		337,803	$2.66	$0.53	$0.61	**$3.81**
Agricultural		921,901	$2.08	$0.53	$0.81	**$3.42**
Industrial		57,752	$2.66	$0.53	$0.39	**$3.58**
Institutional		248,412	$2.66	$0.53	$1.07	**$4.26**
Temporary Construction		30,218	$2.66	$0.53	$2.16	**$5.35**

6.4 PROPOSED RATES

Table 6-7 shows the proposed monthly service charges by meter size for the next four years, starting in January 24, 2017 and January of each subsequent year. In FY 2021, the Desalter is expected to come online, thus changing the water supply mix and related costs. We recommend that the District conduct

[7] Totals may not add up due to rounding
[8] Totals may not add up due to rounding

another COS study at that time to recalculate the water rates. **Table 6-8** shows the proposed monthly private fire line charges by fire line size. **Table 6-9** shows RFC's recommended commodity rates for each customer class and tier, which includes a blended water supply rate for all customers. **Table 6-10** shows an alternate scenario commodity rates for each customer class and tier, that the District developed using pumping data which supported that agriculture customers receive 50% of their water demand from the groundwater supply source. In order to increase revenue stability, the proposed rate schedule is designed to recover approximately an additional 1% per year on the fixed service charges. Thus, in FY 2018, the percentage of rate revenue collected from fixed charges will be approximately 11%.

Table 6-7: Proposed Monthly Service Charges ($/month)

Monthly Meter Charges	January 2017	January 2018	January 2019	January 2020
Meter Size				
3/4"	$10.41	$12.43	$14.85	$17.62
1"	$14.04	$16.77	$20.04	$23.78
1 1/2"	$23.09	$27.57	$32.94	$39.08
2"	$33.96	$40.55	$48.44	$57.47
3"	$68.37	$81.63	$97.52	$115.69
4"	$119.08	$142.17	$169.83	$201.47
6"	$240.43	$287.04	$342.89	$406.76

Table 6-8: Proposed Private Fire Line Charges ($/month)

Monthly Private Fire Line Charges	January 2017	January 2018	January 2019	January 2020
2"	$6.81	$7.46	$8.17	$8.95
3"	$10.29	$11.27	$12.35	$13.53
4"	$16.29	$17.84	$19.54	$21.40
6"	$37.84	$41.44	$45.38	$49.70
8"	$75.01	$82.14	$89.95	$98.50
10"	$130.92	$143.36	$156.98	$171.90
20"	$784.60	$859.14	$940.76	$1,030.14

Table 6-9: RFC Recommended Commodity Rates ($/hcf)

Commodity Rates		January 2017	January 2018	January 2019	January 2020
Residential					
Tier 1	0-10 hcf	$3.20	$3.47	$3.76	$4.08
Tier 2	>10-25 hcf	$3.83	$4.16	$4.51	$4.89
Tier 3	>25 hcf	$4.40	$4.77	$5.17	$5.60
Residential Non-Tiered		$3.92	$4.25	$4.61	$5.00
Residential Multi Family		$3.39	$3.68	$3.99	$4.32
Commercial		$3.67	$3.98	$4.31	$4.67
Agricultural		$3.86	$4.19	$4.54	$4.92
Industrial		$3.44	$3.73	$4.04	$4.38
Institutional		$4.12	$4.47	$4.84	$5.24
Temporary Construction		$5.22	$5.66	$6.13	$6.64

Table 6-10: District's Alternate Scenario Commodity Rates ($/hcf)

Commodity Rates		January 2017	January 2018	January 2019	January 2020
Residential					
Tier 1	0-10 hcf	$3.33	$3.61	$3.91	$4.24
Tier 2	>10-25 hcf	$3.97	$4.31	$4.67	$5.06
Tier 3	>25 hcf	$4.54	$4.93	$5.34	$5.79
Residential Non-Tiered		$4.05	$4.39	$4.76	$5.16
Residential Multi Family		$3.52	$3.82	$4.14	$4.49
Commercial		$3.81	$4.13	$4.48	$4.85
Agricultural		$3.42	$3.71	$4.02	$4.36
Industrial		$3.58	$3.89	$4.22	$4.57
Institutional		$4.26	$4.62	$5.01	$5.43
Temporary Construction		$5.35	$5.80	$6.28	$6.80

7 CONNECTION FEES

This section of the report describes the methodology utilized to calculate the District's proposed connection fees.

7.1 OBJECTIVE AND REGULATORY REQUIREMENTS

The primary objective of establishing a full cost-recovery water capacity charge, or connection fees, is to provide an equitable means by which new users recover their fair-share of cost associated with the increase in capacity that is required to serve them. The basic economic philosophy behind capital facilities charges is that the costs of providing service should be paid for by those that receive utility from the product. Accordingly, many agencies make this one of their principal objectives when administering capital facilities charges. In order to achieve a fair distribution of the value of the system, the charge should reflect a reasonable estimate of the cost of providing capacity to new users, and not unduly burden existing users.

The philosophy that service should be paid for by those that receive utility from the product is often referred to as *"growth-should-pay-for-growth"*. The principal is summarized in the AWWA Manual M26, Water Rates and Related Charges:

> *"The purpose of designing customer-contributed-capital system charges is to prevent or reduce the inequity to existing customers that results when these customers must pay the increase in water rates that are needed to pay for added plant costs for new customers. Contributed capital reduces the need for new outside sources of capital, which ordinarily has been serviced from the revenue stream. Under a system of contributed capital, many water utilities are able to finance required facilities by use of a 'growth-pays-for-growth' policy."*

In this excerpt, customer-contributed-capital is equivalent to capacity charges or connection fees.

Capacity charges or connection fees on new development must be established based on a reasonable relationship to the needs and benefits brought about by the development. Courts have long used a standard of reasonableness to evaluate the legality of capacity charges. The basic statutory standards governing sewer capacity charges are embodied by California Government Code Sections 66013, 66016, 66022 and 66023. Government Code Section 66013, in particular, contains requirements specific to determining utility capacity charges:

> *"Notwithstanding any other provision of law, when a local agency imposes fees for water connections or sewer connections, or imposes capacity charges, those fees or charges shall not exceed the estimated reasonable cost of providing the service for which the fee or charge is imposed, unless a question regarding the amount the fee or charge in excess of the estimated reasonable cost of providing the services or materials is submitted to, and approved by, a popular vote of two-thirds of those electors voting on the issue."*

Section 66013 also includes the following general requirements:

- Local agencies must follow a process set forth in the law, making certain determinations regarding the purpose and use of the fee; they must establish a nexus or relationship between a development project and the public improvement being financed with the fee.
- The capacity charge revenue must be segregated from other funds in order to avoid commingling of capacity charges and other funds.

7.2 METHODOLOGY

The process of calculating connection fees involves two primary steps: determining the cost of capital improvements related to new service connections, and allocating those costs equitably to various types of connections. There are several available methodologies for calculating connection fees. The various approaches have evolved largely around the basis of changing public policy, legal requirements, and the unique and special circumstances of every local agency. However, there are three general approaches that are widely accepted and appropriate for water connection fees. They are the "buy-in", "incremental-cost", and "hybrid" approaches.

Buy-In Approach

The buy-in approach rests on the premise that new customers are entitled to service at the same price as existing customers. However, existing customers have already developed the facilities that will serve new customers, including the costs associated with financing those services. Under this approach, new customers pay only an amount equal to the net investment already made by existing users, based on replacement cost less depreciation. This net equity investment figure divided by the current demand of the system – number of equivalent meters – determines the new user's fee.

For instance, if an existing system has 100 units of average usage and the new connector uses an equivalent unit, then the new customer would pay 1/100th of the total value of the existing system. By contributing this connection fee, the new connector has bought into the existing system. The user has effectively acquired a financial position on par with existing customers and will face future capital challenges on equal financial footing with those customers. This approach is suited for agencies that have capacity in their system and are essentially close to full build-out.

Incremental Cost Approach

When new users connect to a water system, they use either surplus capacity from the existing system, which must then be replaced, or they require new capacity that must be added to the system to accommodate their needs. Under the incremental-cost approach, new customers pay for additional capacity requirements regardless of the value of past investments made by existing customers.

For instance, if it costs X dollars ($X) to provide 100 additional units of capacity for average usage and a new connector uses one of those equivalent units, then the new user would pay $X/100 to connect to the system. In other words, new customers pay the incremental cost of capacity. As with the equity buy-in approach, new connectors will effectively acquire a financial position that is on par with existing

customers. This approach is best suited for growing communities where additional facilities are needed to accommodate growth.

Hybrid Approach

In addition to the above two connection fee calculation methodologies, there is also a hybrid approach which entails using aspects of both the incremental cost approach and the buy-in approach. This is appropriate when cities are in a position where they have already built out their delivery system substantially yet are also in the process of planning or building additional capacity. The hybrid approach recognizes that new customers benefit from both existing infrastructure and planned capital improvements and therefore the charge is calculated to reflect this fact.

7.3 CONNECTION FEES CALCULATION

The most appropriate approach to calculate connection fees for the District is the buy-in approach. Since the District's water infrastructure is substantially built-out, new customers will largely be served by existing infrastructure into which existing customers have invested a considerable amount of economic resources through water rates.

The basic methodology for the buy-in approach is to take the total current and planned values of the District's water systems and divide by the system's current demands represented by equivalent meters.

Current Value of the District's Systems

RFC determined Replacement Cost Less Depreciation (RCLD) as the appropriate method to determine the current value of the water system. RCLD is a commonly used method, and it is often preferred to alternative methods such as Original Cost Less Depreciation (OCLD), Original Cost (OC), and Replacement Cost (RC) because of its defensibility. In most cases – barring, for example, instances of water systems that have depreciated significantly due to lack of replacement and repair – RCLD is more defensible because the replacement cost: 1) is inflation-adjusted and thus recovers the cost of replacing that capacity in current dollars and 2) accounts for depreciation and thus addresses the fact that the system is not new and has been used by existing customers.

Systems Asset Value

For the purpose of calculating the system's RCLD, the District provided original cost records for the fixed assets of the District's utility system as of FY end 2016 (June 30, 2016). OC is inflated to RC, which is the estimated expected cost of a similar facility constructed today. Costs are escalation using a combination of construction-related inflation indices – the 20-City Construction Cost Index (CCI) published by the Engineering News-Record and the Consumer Price Index (CPI). The Construction Cost Index is based on an average of costs among 20 cities, and the Consumer Price Index for all Urban Consumers is published by the United States Bureau of Labor Statistics and is based on changes in yearly data in prices paid by urban consumers for a representative market basket of goods and services. The CCI value of 10,280 for April 2016 and the February 2016 CPI of 247 is used in the calculations. The RCLD of land and easement assets are calculated using the CPI and all other assets are calculated using the CCI.

Accumulated Depreciation

To calculate accumulated depreciation, RFC used the estimated life of each asset provided by the District and used straight line depreciation of the RC to derive the accumulated depreciation for those asset accounts. The accumulated depreciation is then deducted from the RC to determine RCLD. The RCLD value for each asset type is shown in **Table 7-1**.

Table 7-1: Existing System Value (RCLD)

Asset Type	RCLD
General Assets	$4,088,128
Treatment Plant and Related Assets	$2,227,332
Distribution	$18,154,424
Storage	$10,121,142
Source of Supply (Well)	$5,799,579
Meters	$125,766
Pump Stations	$1,404,209
Transmission	$916,846
Firelines/Hydrants	$21,668
Total	**$42,859,094**

Capital Improvement Plan

The cost of CIP is included within the valuation of the system, which were detailed in **Section 3.5**. To recognize that new users enter the system at different times for which the connection fees may remain in effect, RFC utilized the total amount of two years of CIP in the system valuation.

Net Assets Value

Once the systems asset value and the two-year CIP are calculated, the final net assets value can be determined. This number is determined by adding the systems asset value, the two-year CIP, and cash reserves and subtracting the outstanding debt principal. This calculation is shown in **Table 7-2**.

Table 7-2: Net Assets Value Calculation

Capacity Fees	
Total Asset Value	$42,859,094
2-Year CIP Total	$16,122,543
Outstanding Principal	$0
Cash Reserves	$9,777,500
Net Assets Value	**$68,759,137**

Connection Fee Calculation

The final step for the connection fee calculation is deriving the equivalent unit value, which is calculated by dividing the above-determined value of the system by the number of total equivalent meters. For this

Study, the base is a ¾" meter. The different meters and their capacity multipliers are displayed below in **Table 7-3**. From this methodology, RFC determined that there are 15,653 equivalent meters in the District's system.

Table 7-3: Equivalent Meters Calculation

Meter Size	Capacity (gpm)	AWWA Ratio	Total Meters	Equivalent Meters
3/4"	30	1.00	8,651	8,651
1"	50	1.67	1,390	2,317
1 1/2"	100	3.33	358	1,193
2"	160	5.33	318	1,696
3"	350	11.67	107	1,248
4"	630	21.00	24	504
6"	1,300	43.33	1	43
Total			**10,849**	**15,653**

The system's net asset value is divided by its total equivalent meters, resulting in a connection fee of $4,393 for each ¾" meter. The connection fee schedule for each meter size is determined by multiplying the base fee with the corresponding AWWA ratio for that meter size. The proposed connection fee schedule is shown in **Table 7-4**.

Table 7-4: Proposed Connection Fees

Meter Size	Current Fees	Proposed Fees
3/4"	$2,592	$4,393
1"	$5,184	$7,322
1 1/2"	$10,367	$14,643
2"	$18,142	$23,429
3"	$38,876	$51,252
4"	$77,751	$92,253
6"	$155,503	$190,363

APPENDIX

Table 5-6: O&M Expenses Percentage Allocation

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Voice Data Isf								100%	100%
Radio Communications Isf								100%	100%
General Insurance Allocation Isf								100%	100%
Equipment Maintenance		34%	46%	10%	10%			0%	100%
Equipment Maintenance Contracts		34%	46%	10%	10%			0%	100%
Maintenance Supplies		34%	46%	10%	10%			0%	100%
Water System Maintenance Supply		34%	46%	10%	10%			0%	100%
Buildings And Improvements Maintenance								100%	100%
Other Buildings And Improvements Maintenance								100%	100%
Memberships And Dues								100%	100%
Cost Allocation Plan Charges								100%	100%
Miscellaneous Expense								100%	100%
Cross Connection Fees								100%	100%
Federal State Permits And Fees								100%	100%
Conservation Program	100%							0%	100%
Printing And Binding Non Isf							100%	0%	100%
Mail Center Isf							100%	0%	100%
Purchasing Charges Isf								100%	100%
Graphics Charges Isf							100%	0%	100%
Engineering And Technical Surveys	17%	24%	31%	7%	7%	5%	0%	10%	100%
Refuse Disposal								100%	100%
Attorney Services								100%	100%
Lab Services		100%						0%	100%
Collection And Billing Services							100%	0%	100%
Other Professional And Specialized Non Isf								100%	100%
Information Technology Isf								100%	100%
County Geographical Information Systems Expense Isf								100%	100%
Management And Admin Survey Isf								100%	100%
Public Works Isf Charges		33%	43%	8%	2%		15%	0%	100%
Professional And Specialized Services Isf								100%	100%
Publications And Legal Notices							100%	0%	100%
Rent And Leases Equipment Noncounty Owned								100%	100%

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Computer Equipment <5000								100%	100%
Furniture And Fixtures <5000								100%	100%
Small Tools And Instruments								100%	100%
Minor Equipment								100%	100%
Meter Purchases						100%		0%	100%
Transportation Charges Isf								100%	100%
Transportation Work Order								100%	100%
Groundwater Extraction	100%							0%	100%
Water Supply Cost	100%							0%	100%
Capacity Reservation Charge (CRC)		43%	57%					0%	100%
MWD RTS Charge		43%	57%					0%	100%
Water And Sewer System Power	100%							0%	100%
Moorpark Desalter - Power	100%							0%	100%
Moorpark Desalter - Labor	100%							0%	100%
Moorpark Desalter - Chemical	100%							0%	100%
Moorpark Desalter - Maintenance	100%							0%	100%
Moorpark Desalter - Membrane Replacement	100%							0%	100%
Moorpark Desalter - Brine Disposal	100%							0%	100%
Contributions To Other Funds								100%	100%
Funded Depreciation	17%	24%	31%	7%	7%	5%	0%	10%	100%

Table 5-7: Total O&M Expenses Allocation by Cost Causation Component

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Voice Data Isf	$0	$0	$0	$0	$0	$0	$0	$8,300	$8,300
Radio Communications Isf	$0	$0	$0	$0	$0	$0	$0	$0	$0
General Insurance Allocation Isf	$0	$0	$0	$0	$0	$0	$0	$30,700	$30,700
Equipment Maintenance	$0	$2,058	$2,750	$592	$600	$0	$0	$0	$6,000
Equipment Maintenance Contracts	$0	$119,346	$159,500	$34,354	$34,800	$0	$0	$0	$348,000
Maintenance Supplies	$0	$78,878	$105,417	$22,705	$23,000	$0	$0	$0	$230,000
Water System Maintenance Supply	$0	$37,724	$50,417	$10,859	$11,000	$0	$0	$0	$110,000
Buildings And Improvements Maintenance	$0	$0	$0	$0	$0	$0	$0	$75,000	$75,000
Other Buildings And Improvements Maintena	$0	$0	$0	$0	$0	$0	$0	$0	$0
Memberships And Dues	$0	$0	$0	$0	$0	$0	$0	$9,600	$9,600
Cost Allocation Plan Charges	$0	$0	$0	$0	$0	$0	$0	$17,900	$17,900
Miscellaneous Expense	$0	$0	$0	$0	$0	$0	$0	$10,000	$10,000
Cross Connection Fees	$0	$0	$0	$0	$0	$0	$0	$18,900	$18,900
Federal State Permits And Fees	$0	$0	$0	$0	$0	$0	$0	$25,900	$25,900
Conservation Program	$4,000	$0	$0	$0	$0	$0	$0	$0	$4,000
Printing And Binding Non Isf	$0	$0	$0	$0	$0	$0	$2,000	$0	$2,000
Mail Center Isf	$0	$0	$0	$0	$0	$0	$76,800	$0	$76,800
Purchasing Charges Isf	$0	$0	$0	$0	$0	$0	$0	$23,000	$23,000
Graphics Charges Isf	$0	$0	$0	$0	$0	$0	$60,400	$0	$60,400
Engineering And Technical Surveys	$18,489	$25,975	$34,571	$8,177	$7,313	$4,982	$0	$10,492	$110,000
Refuse Disposal	$0	$0	$0	$0	$0	$0	$0	$1,000	$1,000
Attorney Services	$0	$0	$0	$0	$0	$0	$0	$22,900	$22,900
Lab Services	$0	$29,000	$0	$0	$0	$0	$0	$0	$29,000
Collection And Billing Services	$0	$0	$0	$0	$0	$0	$105,500	$0	$105,500
Other Professional And Specialized Non Isf	$0	$0	$0	$0	$0	$0	$0	$92,100	$92,100
Information Technology Isf	$0	$0	$0	$0	$0	$0	$0	$0	$0
County Geographical Information Systems Ex	$0	$0	$0	$0	$0	$0	$0	$800	$800
Management And Admin Survey Isf	$0	$0	$0	$0	$0	$0	$0	$230,900	$230,900
Public Works Isf Charges	$0	$939,026	$1,227,158	$232,268	$42,830	$0	$414,019	$0	$2,855,300
Professional And Specialized Services Isf	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Publications And Legal Notices	$0	$0	$0	$0	$0	$0	$800	$0	$800
Rent And Leases Equipment Noncounty Owne	$0	$0	$0	$0	$0	$0	$0	$12,000	$12,000
Computer Equipment <5000	$0	$0	$0	$0	$0	$0	$0	$10,500	$10,500
Furniture And Fixtures <5000	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Small Tools And Instruments	$0	$0	$0	$0	$0	$0	$0	$0	$0

O&M Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Minor Equipment	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Meter Purchases	$0	$0	$0	$0	$0	$495,000	$0	$0	$495,000
Transportation Charges Isf	$0	$0	$0	$0	$0	$0	$0	$8,900	$8,900
Transportation Work Order	$0	$0	$0	$0	$0	$0	$0	$2,000	$2,000
Groundwater Extraction	$17,500	$0	$0	$0	$0	$0	$0	$0	$17,500
Water Supply Cost	$10,193,040	$0	$0	$0	$0	$0	$0	$0	$10,193,040
Capacity Reservation Charge (CRC)	$0	$147,442	$191,674	$0	$0	$0	$0	$0	$339,116
MWD RTS Charge	$0	$285,063	$370,581	$0	$0	$0	$0	$0	$655,644
Water And Sewer System Power	$624,700	$0	$0	$0	$0	$0	$0	$0	$624,700
Moorpark Desalter - Power	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Labor	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Chemical	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Maintenance	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Membrane Replacement	$0	$0	$0	$0	$0	$0	$0	$0	$0
Moorpark Desalter - Brine Disposal	$0	$0	$0	$0	$0	$0	$0	$0	$0
Contributions To Other Funds	$0	$0	$0	$0	$0	$0	$0	$83,200	$83,200
Funded Depreciation	$134,683	$189,217	$251,838	$59,567	$53,270	$36,293	$0	$76,432	$801,300
TOTAL O&M EXPENSES	**$10,992,412**	**$1,853,729**	**$2,393,906**	**$368,522**	**$172,812**	**$536,275**	**$659,519**	**$776,525**	**$17,753,700**
O&M Expenses Allocation	62%	10%	13%	2%	1%	3%	4%	4%	100%

Table 5-8: Capital Assets Percentage Allocation

Capital Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
General Assets								100%	100%
Treatment Plant and Related Assets		43%	57%						100%
Distribution		27%	36%	18%	10%	10%			100%
Storage		38%	52%	0%	10%				100%
Source of Supply (Well)	100%								100%
Meters						100%			100%
Pump Stations	100%								100%
Transmission		43%	57%						100%
Firelines/Hydrants					100%				100%

Table 5-9: Total Capital Assets Allocation by Cost Causation Component

Capital Allocation	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
General Assets	$0	$0	$0	$0	$0	$0	$0	$4,088,128	$4,088,128
Treatment Plant and Related Assets	$0	$968,405	$1,258,927	$0	$0	$0	$0	$0	$2,227,332
Distribution	$0	$4,859,170	$6,478,294	$3,186,076	$1,815,442	$1,815,442	$0	$0	$18,154,424
Storage	$0	$3,894,440	$5,214,588	$0	$1,012,114	$0	$0	$0	$10,121,142
Source of Supply (Well)	$5,799,579	$0	$0	$0	$0	$0	$0	$0	$5,799,579
Meters	$0	$0	$0	$0	$0	$125,766	$0	$0	$125,766
Pump Stations	$1,404,209	$0	$0	$0	$0	$0	$0	$0	$1,404,209
Transmission	$0	$398,628	$518,217	$0	$0	$0	$0	$0	$916,846
Firelines/Hydrants	$0	$0	$0	$0	$21,668	$0	$0	$0	$21,668
TOTAL ASSETS	**$7,203,788**	**$10,120,643**	**$13,470,026**	**$3,186,076**	**$2,849,225**	**$1,941,208**	**$0**	**$4,088,128**	**$42,859,094**
Assets Allocation	17%	24%	31%	7%	7%	5%	0%	10%	100%

Table 5-11: Derivation of Cost Causation Component Units

	Monthly Tiers (hcf)	Annual Use (hcf)	Average Daily Use (hcf/day)	Maximum Day Requirements Capacity Factor	Maximum Day Requirements Total Capacity (hcf/day)	Maximum Day Requirements Extra Capacity (hcf/day)	Maximum Hour Requirements Capacity Factor	Maximum Hour Requirements Total Capacity (hcf/day)	Maximum Hour Requirements Extra Capacity (hcf/day)	No. of Meters (Equiv.)	No. of Bills (No.)
Residential		1,987,658	5,446	1.52	8,287	2,841	1.98	10,773	2,486	11,970	120,828
Tier 1	10	868,786	2,380	1.07	2,553	173	1.39	3,319	766		
Tier 2	25	548,943	1,504	1.67	2,507	1,003	2.17	3,259	752		
Tier 3	>25	569,929	1,561	2.20	3,438	1,876	2.86	4,469	1,031		
Residential Non-Tiered		145,958	400	1.75	698	298	2.27	908	210		
Residential Multi Family		189,887	520	1.25	650	130	1.63	845	195	516	1,548
Commercial		337,803	925	1.52	1,402	477	1.97	1,823	421	682	2,712
Agricultural		921,901	2,526	1.70	4,287	1,762	2.21	5,574	1,286	1,463	1,872
Industrial		57,752	158	1.31	207	48	1.70	268	62	171	768
Institutional		248,412	681	1.94	1,320	639	2.52	1,716	396	669	2,160
Temporary Construction		30,218	83	2.96	245	162	3.85	319	74		
Private Fire Service										292	2,964
TOTAL		**3,919,588**	**10,739**		**17,307**	**6,569**		**22,500**	**5,192**	**15,763**	**132,852**

Table 5-12: Unit Cost Calculation

		Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
1	Operating Expenses	$9,750,209	$1,644,248	$2,123,382	$326,877	$153,283	$475,673	$584,989	$688,773	$15,747,435
2	Capital Expenses	$134,683	$189,217	$251,838	$59,567	$53,270	$36,293	$0	$76,432	$801,300
3	**Total Cost of Service**	**$9,884,892**	**$1,833,465**	**$2,375,220**	**$386,445**	**$206,553**	**$511,966**	**$584,989**	**$765,205**	**$16,548,735**
4	Allocation of General Cost		$237,848	$308,127	$50,132	$26,795	$66,415	$75,888	($765,205)	$0
5	Allocation of Public Fire Protection Cost					($118,371)	$118,371			$0
6	Allocation of Peaking Cost to Meter			($268,335)	($43,658)		$311,992			$0
7	**Total Adjusted Cost of Service**	**$9,884,892**	**$2,071,312**	**$2,415,012**	**$392,919**	**$114,976**	**$1,008,745**	**$660,878**	**$0**	**$16,548,735**
8	Unit of Service	3,919,588	3,919,588	6,569	5,192	3,499	185,652	132,852		
9	Unit	hcf	hcf	hcf/day	hcf/day	equiv. meter/yr	equiv. meter/yr	bills/yr		
10	Unit Cost	$2.52	$0.53	$367.65	$75.67	$32.86	$5.43	$4.97		
11	Unit	hcf	hcf	hcf/day	hcf/day	equiv. meter/mo	equiv. meter/mo	bills/mo		

Table 5-13: Allocation of Cost to Customer Class

	Supply	Base Delivery	Max Day	Max Hour	Fire	Meter	Customer	General	TOTAL
Residential	$5,012,717	$1,050,381	$1,122,064	$192,917	$0	$780,472	$601,064		$8,759,614
Tier 1	$2,191,011	$459,111	$63,637	$57,967					
Tier 2	$1,384,391	$290,090	$368,645	$56,907					
Tier 3	$1,437,315	$301,180	$689,783	$78,043					
Residential Non-Tiered	$368,094	$77,132	$109,740	$15,855					$570,820
Residential Multi Family	$478,879	$100,346	$47,831	$14,764		$33,666	$7,701		$683,186
Commercial	$851,912	$178,512	$175,263	$31,833		$44,446	$13,491		$1,295,459
Agricultural	$2,324,962	$487,180	$647,644	$97,333		$95,391	$9,312		$3,661,822
Industrial	$145,646	$30,519	$17,750	$4,688		$11,128	$3,820		$213,551
Institutional	$626,475	$131,274	$234,986	$29,961		$43,642	$10,745		$1,077,083
Temporary Construction	$76,208	$15,969	$59,734	$5,568		$0	$0		$157,479
Private Fire Service					$114,976		$14,745		$129,721
TOTAL	**$9,884,892**	**$2,071,312**	**$2,415,012**	**$392,919**	**$114,976**	**$1,008,745**	**$660,878**	**$0**	**$16,548,735**