



To: City Council, City of Santa Barbara
Subject: Fiscal Year 2017/18 Water Rate Model Analysis
Date: 8.1.2017
From: Douglas Dove, President; Michael DeGroot, Financial Analyst

Background

Bartle Wells Associates (BWA) completed a previous water rate analysis for the City of Santa Barbara in July 2016 resulting in Fiscal Year 2016/17 water rates adopted on August 9, 2016. BWA has been retained by the City to update the water rate model and develop proposed water rates for Fiscal Years 2018, 2019, and 2020.

Key objectives of BWA's analysis include: (1) an independent update of the water rate model based on the most recent financial and water use information and (2) a detailed cost of service analysis to ensure compliance of City water rates with California Proposition 218.

Current and Proposed Water Rates

Table 1 shows a summary of current (FY 2016/17) water rates and a comparison of BWA proposed rates for FY 2017/18. Rates are shown for FY 2018/19 and FY 2019/20 based on increases to meet projected revenue requirements. The rate schedules are summarized below:

- 1. Current Rates (Revised from Notice):** The initial proposed FY 2016/17 water rates were mailed to customers in April 2017. A public hearing for City Council to consider the proposed increases was held on June 14, 2016 at 2:00 pm. The rates would have been effective on July 1, 2016, however, the public hearing was continued to August 9, 2016 pending BWA's independent analysis. BWA's analysis resulted in rates which are higher for some customers and tier levels, and lower for others. The notice revised rates are held to the minimum of BWA's proposed rate and the noticed rate. As a result, the rates do not exceed BWA's cost of service.
- 2. Proposed Rates (FY 2017/18):** The rates developed in this memorandum are based on updated financial information, water supplies, and water use projections. The City remains in a Stage Three Drought condition. However, the water supply situation had some improvement in Spring 2017 and City Council revised the conservation target to 30% on March 21, 2017 (Resolution 17-017). The conservation target at the time of developing FY 2016/17 water rates was 35%. As such, BWA's FY 2018 proposed rates are based on 5% higher water sales based on an estimate of FY 2016/17 annual use. **Chart A** shows bill impacts of the proposed rates for a range of single family residential users.

Table 1
City of Santa Barbara
Current & Proposed Water Rates

		Current Rates	Proposed Rates					
		(Revised from Notice)	FY 2017/18	% Increase	FY 2018/19	% Increase	FY 2019/20	% Increase
Monthly Water Meter Service Charge*								
Meter Size								
	5/8"	\$24.50	\$25.89	6%	\$27.36	6%	\$28.92	6%
	3/4"	\$35.60	\$37.65	6%	\$39.81	6%	\$42.10	6%
	1"	\$57.80	\$61.15	6%	\$64.70	6%	\$68.45	6%
	1 1/2"	\$113.29	\$119.91	6%	\$126.92	6%	\$134.34	6%
	2"	\$179.89	\$190.43	6%	\$201.59	6%	\$213.40	6%
	3"	\$390.77	\$413.74	6%	\$438.05	6%	\$463.80	6%
	4"	\$701.54	\$742.81	6%	\$786.51	6%	\$832.79	6%
	6"	\$1,445.18	\$1,530.25	6%	\$1,620.34	6%	\$1,715.72	6%
	8"	\$2,666.07	\$2,823.06	6%	\$2,989.30	6%	\$3,165.32	6%
	10"	\$4,219.93	\$4,459.38	6%	\$4,712.41	6%	\$4,979.80	6%
Monthly Fire Line Service Charge								
Meter Size								
	1"	\$2.76	\$2.88	4%	\$3.01	4%	\$3.14	4%
	1 1/2"	\$3.64	\$3.83	5%	\$4.03	5%	\$4.24	5%
	2"	\$5.16	\$5.47	6%	\$5.79	6%	\$6.14	6%
	4"	\$19.99	\$21.45	7%	\$23.02	7%	\$24.70	7%
	6"	\$53.67	\$57.76	8%	\$62.15	8%	\$66.89	8%
	8"	\$111.77	\$120.38	8%	\$129.65	8%	\$139.63	8%
	10"	\$199.17	\$214.58	8%	\$231.18	8%	\$249.06	8%
	12"	\$320.29	\$345.13	8%	\$371.89	8%	\$400.73	8%
Water Service Rates	Monthly Tiers							
SFR								
Tier 1	First 4 hcf	\$4.56	\$4.44	-3%	\$4.44	0%	\$4.44	0%
Tier 2	Next 12 hcf	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%
Tier 3	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
MFR								
Tier 1	First 4 hcf	\$4.56	\$4.44	-3%	\$4.44	0%	\$4.44	0%
Tier 2	Next 4 hcf	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%
Tier 3	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
Commercial/Industrial								
Tier 1	100% of allocation	\$6.28	\$6.52	4%	\$6.76	4%	\$7.01	4%
Tier 2	All other hcf	\$23.94	\$23.91	0%	\$23.91	0%	\$23.91	0%
Irrigation - Residential								
Tier 1	100% of allocation	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
Irrigation - Commercial								
Tier 1	100% of allocation	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
Irrigation - Recreation/Parks/Schools								
Tier 1	100% of allocation	\$3.77	\$4.11	9%	\$4.48	9%	\$4.88	9%
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
Irrigation - Agriculture								
Tier 1	100% of allocation	\$3.42	\$3.01	-12%	\$3.01	0%	\$3.01	0%
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%
Recycled Water	100% of allocation	\$3.02	\$3.42	13%	\$3.88	13%	\$4.40	13%

*Multifamily auxiliary master meters which serve submeters owned and maintained by the City are subject to a monthly operations and maintenance fee not to exceed \$88 per month.

Chart A
City of Santa Barbara
Single Family Residence Water Bill Impacts, BWA Proposed Rates

Current

SFR User	hcf usage	Meter Charge ¹	Volumetric Charge	Total Monthly Charge
Low User	4	\$24.50	\$18.24	\$42.74
Average User	9	\$24.50	\$83.09	\$107.59
Moderate User	10	\$24.50	\$96.06	\$120.56
High User	20	\$24.50	\$270.96	\$295.46

Proposed FY 2017/18

SFR User	hcf usage	Meter Charge ¹	Volumetric Charge	Total Monthly Charge	Monthly Increase/Decrease from Current
Low User	4	\$25.89	\$17.76	\$43.65	\$0.91
Average User	9	\$25.89	\$82.56	\$108.45	\$0.86
Moderate User	10	\$25.89	\$95.52	\$121.41	\$0.85
High User	20	\$25.89	\$269.20	\$295.09	-\$0.37

1 - Assumes 5/8" Meter

Water Enterprise Reserves

Table 2 shows the reserve fund balances for the water enterprise. The City’s existing reserve policy establishes three reserve funds:

- Disaster reserve equal to at least 15% of its annual operating budget for the following fiscal year set aside for the purpose of responding to natural disasters and emergencies.
- Contingency reserve equal to at least 10% of its annual operating budget for the following fiscal year set aside for the purpose of funding unique one-time costs and to permit budget adjustments during periods of reductions.
- Capital reserve fund, to be used to fund ongoing capital expenses. For the capital reserve fund, the City has established a fund target equal to the minimum of either the prior 3-year average CIP, the prior 5-year average CIP, OR 5% of the City’s water net asset values.

Based on the policies described above, the FY 2017/18 reserve target is approximately \$17 million. The actual projected FY 2017/18 total ending reserve balance is approximately \$21.15 million (including rate stabilization funds of \$5,000,000), which is above policy requirements.

Table 2
City of Santa Barbara
Water Enterprise Reserve Fund Balances

	FY 2018	FY 2019	FY 2020
Total Funds @ 7/1¹	\$27,462,121	\$21,156,098	\$16,045,738
Projected Funds @ 6/30¹	\$21,156,098	\$16,045,738	\$17,213,823
City Target Reserve Policy			
Disaster Reserve (15% of Operating Budget)	\$5,610,329	\$5,744,437	\$5,896,000
Contingency (10% of Operating Budget)	\$3,740,219	\$3,829,625	\$3,930,666
Capital	<u>\$7,735,000</u>	<u>\$8,051,000</u>	<u>\$8,598,200</u>
	\$17,085,548	\$17,625,062	\$18,424,866

1 Includes Rate Stabilization Fund balance of \$5,000,000

Projected Customer Growth and Water Use

Table 3 shows customer base projections. The water enterprise serves approximately 27,677 connections, including about 500 fire line connections. Overall growth in new connections, excluding fire line, is estimated to be approximately 0.32% per year based on demand and urban water use projections, provided by City staff.

Table 3
City of Santa Barbara
Customer Base Projections

User Class	Projected		
	FY 2018	FY 2019	FY 2020
Meters, excluding Fire Line			
5/8"	20,092	20,156	20,220
3/4"	1,361	1,365	1,369
1"	3,938	3,950	3,962
1 1/2"	797	801	805
2"	890	893	896
3"	35	35	35
4"	21	21	21
6"	16	16	16
8"	3	3	3
<u>10"</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total Meters, excluding Fire Line	27,153	27,240	27,327
<i>% Increase</i>	<i>0.32%</i>	<i>0.32%</i>	<i>0.32%</i>
Fire Line			
1"	0	0	0
1 1/2"	0	0	0
2"	174	174	174
4"	239	239	239
6"	83	83	83
8"	25	25	25
10"	2	2	2
<u>12"</u>	<u>1</u>	<u>1</u>	<u>1</u>
Total Fire Line	524	524	524

Water Use Projections

Table 4 shows water use projections developed based on input from City staff.

The City is has been experiencing an extreme multi-year drought, and is currently in a Stage 3 Drought Emergency. Given continued drought and projected water shortages, the City Council adopted Resolution 17-017 establishing a 30% conservation target. A previous resolution was approved April 26, 2016 with a 35% conservation target, which was the basis of water use projections for Fiscal Year 2017 water rates. For purposes of developing FY 2018-2020 water rates, projections assume metered potable use increases by 5% in FY 2018 and 3% in FY 2019 and FY 2020. Recycled use is estimated to increase 5% each year.

Table 4
City of Santa Barbara
Water Use Projections (hcf)

	FY 2016	FY 2017	% Δ from prior	FY 2018	% Δ from prior	FY 2019	% Δ from prior	FY 2020	% Δ from prior
All Customers									
Single Family Residential (SFR)	1,758,728	1,492,648	-15%	1,567,281	5%	1,614,299	3%	1,662,728	3%
Multi-Family Residential (MFR)	1,018,168	947,340	-7%	994,707	5%	1,024,549	3%	1,055,285	3%
Commercial/Industrial	867,503	850,724	-2%	893,260	5%	920,058	3%	947,659	3%
Irrigation - Residential	96,518	76,740	-20%	80,577	5%	82,994	3%	85,484	3%
Irrigation - Commercial	21,953	16,992	-23%	17,842	5%	18,377	3%	18,929	3%
Irrigation - Recreation/Parks/Schools	60,360	66,694	10%	70,029	5%	72,129	3%	74,293	3%
Irrigation - Agriculture	64,546	27,633	-57%	29,015	5%	29,885	3%	30,782	3%
Recycled Water	234,998	338,356	44%	355,274	5%	373,038	5%	391,690	5%
TOTAL WATER USAGE	4,122,774	3,817,128	-7.4%	4,007,984	5.0%	4,135,329	3.2%	4,266,850	3.2%
Excluding Recycled Water	3,887,776	3,478,772	-10.5%	3,652,710	5.0%	3,762,292	3.0%	3,875,160	3.0%

Water Enterprise Expenses

Table 5 shows projected water operating and maintenance (O&M) expenses. Major ongoing expense items include: Water Resources Management, Water Treatment, Water Supply Management, and Water Distribution. Water Drought expenses include: purchase and conveyance of supplemental water purchases, conveyance facilities to deliver water from Cachuma, and expenses related to outreach and conservation programs.

Table 5
City of Santa Barbara
O&M Expenses

Description	Proposed		
	FY 2018	FY 2019	FY 2020
Water Resources Management	\$9,386,455	\$9,381,233	\$9,528,386
Water Supply Management	\$5,292,638	\$5,298,778	\$5,405,797
Gibraltar Dam Operations	\$487,199	\$492,538	\$507,981
Recycled Water	\$918,723	\$942,388	\$973,591
Water Treatment (Wells)	\$905,052	\$299,080	\$308,401
Cater Water Treatment	\$4,761,967	\$4,824,783	\$4,965,014
Water Distribution	\$8,419,007	\$8,556,012	\$8,823,252
Meter Reading	\$787,455	\$802,226	\$833,106
Water Laboratories	\$784,541	\$805,155	\$830,719
Water Drought	\$3,222,506	\$3,222,572	\$1,000,000
TOTAL O&M EXPENSES	\$34,965,543	\$34,624,765	\$33,176,248

Table 6 shows the water enterprise projected capital improvement program (CIP). The CIP is projected to be rate funded through annual transfers from the Operating Fund.

Table 6
City of Santa Barbara
Capital Improvement Program

Project Number	Program	Proposed		
		FY 2018	FY 2019	FY 2020
48201	Water Main Replacement Program	\$4,700,000	\$4,700,000	\$4,700,000
40530	Water Meter Replacement Program	\$500,000	\$500,000	\$500,000
48359	Groundwater Supply Program	\$0	\$100,000	\$100,000
48432	Distribution Pump Station Program	\$2,425,000	\$1,800,000	\$900,000
48240	Recycled Water/City Facilities	\$707,000	\$350,000	\$50,000
48437	Distribution Reservoir Program	\$235,000	\$850,000	\$550,000
48239	Cater Treatment Plant Equipment Maintenance	\$533,000	\$1,000,000	\$445,000
	Capital Equipment	\$424,195	\$339,395	\$350,000
	<u>Drought Related Projects</u>	<u>\$350,000</u>	<u>\$350,000</u>	<u>\$0</u>
	Total	\$9,874,195	\$9,989,395	\$7,595,000

Table 7 shows the water enterprise existing and projected debt service, with debt service increasing to \$15.2 million by FY 2020.

Table 7
City of Santa Barbara
Debt Service

Description	FY 2018	FY 2019	FY 2020
2013 COP	\$2,138,450	\$2,136,000	\$2,138,450
Cater Phase I & II	\$1,144,246	\$1,144,246	\$1,144,246
Cater Phase III	\$1,121,792	\$1,121,792	\$1,121,792
Ortega Ground Water	\$577,592	\$577,592	\$577,592
Desal Debt Service	\$2,646,377	\$4,128,654	\$4,128,654
State Water Expenses	\$6,000,000	\$6,000,000	\$6,120,000
Total Existing Debt Service	\$13,628,457	\$15,108,284	\$15,230,734

Water Enterprise Revenue

Table 8 shows the water enterprise miscellaneous revenue sources. BWA and City staff propose that the City begin collecting fees for the operation and maintenance of auxiliary master meters, for which the City owns the individual submeters. BWA estimates the City will collect an additional \$8,547 per year from these 10 customers.

Table 8
City of Santa Barbara
Misc Revenue

Description	Projected		
	FY 2018	FY 2019	FY 2020
Service Charges	\$3,445,285	\$3,495,225	\$3,575,117
Interest Income	\$310,000	\$320,900	\$324,109
Auxillary Master Meter Fee	\$8,547	\$8,547	\$8,547
Other Revenues	\$54,720	\$54,720	\$55,814
TOTAL MISC REVENUES	\$3,818,552	\$3,879,392	\$3,963,587

Auxiliary Master Meter Fee

Chart B shows the calculation of the auxiliary master meter fee. The monthly auxiliary master meter fee is designed to recoup costs associated with maintaining multifamily master meters which are not billed a fixed meter charge; rather the meter charge is collected for each individual submeter. This fee is necessary because the City faces additional costs to repair and maintain multifamily master meters in addition to the submeters. The auxiliary master meter fee includes two components: 1) a hardware cost to recover the cost of vaults, valves, meters, strainers, and connectors, and 2) the monthly labor cost to maintain the meters. The recommended fee is between \$62 and \$88 per month based on meter size.

Chart B
City of Santa Barbara
Auxillary Master Meter Fee

Life Cycle (Yrs):	Vault	Valve	Meter, Strainer, & Nicor Connector	Total Hardware Cost	Total/Yr (Hardware)	Total/Yr (Labor)	Total/Mth
	50	50	20				
2"	\$4,000	\$300	\$350	\$4,650	\$104	\$644	\$62
3"	\$4,000	\$300	\$1,580	\$5,880	\$165	\$644	\$67
4"	\$4,000	\$450	\$2,175	\$6,625	\$198	\$644	\$70
6"	\$4,000	\$560	\$3,575	\$8,135	\$270	\$644	\$76
8"	\$5,000	\$875	\$4,525	\$10,400	\$344	\$644	\$82
10"	\$5,000	\$1,000	\$5,775	\$11,775	\$409	\$644	\$88

O&M Labor	Frequency	Cost	
Valve Exercising	Annually	\$ 92.00	2 staff @ \$92/hr (1 senior, 1 WDO2) for 1 hr
Meter Reading	Monthly	\$ 13.67	1 staff @ \$41/hr, 20 min per month (includes drive time/vehicle use)
Billing & Supervision	Monthly	\$ 30.00	(UB Supervisor @ \$60/hr, 1/2 hr of time each month to run batch)
Meter Replacement	20 Years	\$ 552.00	2 staff @ \$92/hr (1 senior, 1 WDO2) for 3 hr (includes prep time)

Financial Projections

Table 9 shows the projected rate revenue based on an August 2017 rate adoption.

Table 9
City of Santa Barbara
Annual Rate Revenue Proration

	2017 Rates, FY 2018 Consumption & Meters	Proposed Rates, FY 2018 Consumption & Meters	Prorated FY 2018 Revenue ¹
Meter Charges	\$13,102,675	\$13,860,150	\$13,797,027
Volumetric Charges	<u>\$35,347,438</u>	<u>\$35,408,040</u>	<u>\$35,402,990</u>
	\$48,450,112	\$49,268,190	\$49,200,017
Loss (Gain) from 1 Month Late Adoption:			\$68,173

¹ Calculated based on 1 months of current rates and 11 months of proposed rates in FY 2018

Table 10 shows a cash flow projection for the water enterprise. Proposed rates are designed to increase metered sales by approximately 9% between FY 2017 and FY 2018. Overall increases to metered sales of about 5% in FY 2019 and FY 2020 are estimated to be required to meet financial targets.

The City's Water Fund parity debt obligations contain a covenant that rates for a given year must be set at a level which is sufficient to generate revenue to maintain a debt coverage ratio of 1.25 times the total debt service on all parity obligations for that year. The debt coverage ratio is calculated by dividing the net operating revenue by the total debt service on parity obligations. The proposed water rates were developed such that the City will meet its debt coverage requirements based on projected water use, revenues, and operating expenses.

In the event that revenues are lower than expected or costs are higher than expected, the City has established a Rate Stabilization Reserve that may be used as one-time revenue inflows to not only meet debt coverage requirements, but also to remain in compliance with rate covenants contained within bond and other loan documents.

Table 10
City of Santa Barbara
Cash Flow Projection

	Projected		
	FY 2018	FY 2019	FY 2020
Metered Revenue % Increase	9.2%	4.9%	4.8%
REVENUES			
Metered Sales	\$49,200,017	\$51,589,089	\$54,059,060
Service Charges	\$3,445,285	\$3,495,225	\$3,575,117
Interest Income	\$310,000	\$320,900	\$324,109
<u>Other Revenues</u>	<u>\$54,720</u>	<u>\$54,720</u>	<u>\$55,814</u>
Total Revenue	\$53,010,022	\$55,459,934	\$58,014,100
OPERATING BUDGET			
Salaries & Benefits	\$10,457,550	\$10,763,254	\$11,193,784
Materials/Supplies/Services	\$13,407,771	\$12,606,254	\$12,769,072
Allocated Costs	\$4,150,357	\$4,305,326	\$4,434,486
Special Projects	\$3,727,359	\$3,727,359	\$3,778,906
<u>Drought Related Operating Expenses</u>	<u>\$3,222,506</u>	<u>\$3,222,572</u>	<u>\$1,000,000</u>
Total Operating Expenses	\$34,965,543	\$34,624,765	\$33,176,248
NET OPERATING REVENUE	\$18,044,479	\$20,835,169	\$24,837,852
DEBT SERVICE	13,628,457	15,108,284	15,230,734
NET INCOME	\$4,416,022	\$5,726,885	\$9,607,118
CAPITAL			
Capital Improvement Program	\$9,100,000	\$9,300,000	\$7,245,000
Capital Equipment	\$424,195	\$339,395	\$346,183
<u>Drought Capital Program</u>	<u>\$350,000</u>	<u>\$350,000</u>	<u>\$0</u>
Subtotal	\$9,874,195	\$9,989,395	\$7,591,183
NET ADDITION TO/(USE OF) RESERVES	(\$5,458,173)	(\$4,262,510)	\$2,015,935
Beginning Reserves Balance - July 1	\$27,462,121	\$21,156,098	\$16,045,738
Less: Reserve Restrictions	\$847,850	\$847,850	\$847,850
Add: Reserves Adjustment	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>
Ending Reserves Balance - June 30	\$21,156,098	\$16,045,738	\$17,213,823
Council Policy Reserves			
Contingency Reserve	\$3,740,219	\$3,829,625	\$3,930,666
Disaster Reserve	\$5,610,329	\$5,744,437	\$5,896,000
Capital Reserve	\$7,735,000	\$8,051,000	\$8,598,200
Total Council Policy Reserves	\$17,085,548	\$17,625,062	\$18,424,866
Reserves Above (Below) Policy	\$4,070,549	(\$1,579,324)	(\$1,211,043)
Parity Debt Coverage Ratio (1.25x Requirement)	1.45	1.49	1.76

Cost of Service

Table 11 and **Table 12** provide an allocation of O&M expenses and Capital assets, respectively, to billing components. The purpose of the expense and asset allocation is to determine the percentage of FY 2017/18 O&M and Capital revenue requirements, determined in **Table 13**, to be recovered from each rate component.

System billing components, including water use, maximum day and maximum hour capacity requirements, monthly bills, and meter equivalents are shown in **Table 14**.

Table 11
City of Santa Barbara
Cost of Service - O&M Allocation

O&M Allocation	Base	Max Day	Max Hour	Fire	Meter	Billing	Recycled Water	Desal	Conservation	General	Total
Water Resources Management										100%	100.0%
Water Supply Management	93%				0%				7%		100.0%
CCWA Fixed Expenses	93%								7%		100.0%
Desalinated Water Costs								100%			100.0%
Gibraltar Dam Operations	50%	50%	0%								100.0%
Recycled Water							100%				100.0%
Water Treatment (Wells)	50%	50%	0%								100.0%
Cater Water Treatment	50%	50%	0%								100.0%
Water Distribution	30%	36%	17%	10%	7%						100.0%
Meter Reading						100%					100.0%
Water Laboratories	100%										100.0%
Water Drought	77%								23%		100.0%

O&M Allocation	Base	Max Day	Max Hour	Fire	Meter	Billing	Recycled Water	Desal	Conservation	General	Total
Water Resources Management	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,386,455	\$9,386,455
Water Supply Management	\$4,898,516	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$394,122	\$0	\$5,292,638
CCWA Fixed Expenses	\$5,553,203	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$446,797	\$0	\$6,000,000
Desalinated Water Costs	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$5,292,385	\$0	\$0	\$5,292,385
Gibraltar Dam Operations	\$243,600	\$243,600	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$487,199
Recycled Water	\$0	\$0	\$0	\$0	\$0	\$0	\$918,723	\$0	\$0	\$0	\$918,723
Water Treatment (Wells)	\$452,526	\$452,526	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$905,052
Cater Water Treatment	\$2,380,984	\$2,380,984	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$4,761,967
Water Distribution	\$2,525,702	\$3,030,843	\$1,431,231	\$841,901	\$589,330	\$0	\$0	\$0	\$0	\$0	\$8,419,007
Meter Reading	\$0	\$0	\$0	\$0	\$0	\$787,455	\$0	\$0	\$0	\$0	\$787,455
Water Laboratories	\$784,541	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$784,541
Water Drought	\$2,496,924	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$725,582	\$0	\$3,222,506
TOTAL O&M EXPENSES	\$19,335,995	\$6,107,952	\$1,431,231	\$841,901	\$589,330	\$787,455	\$918,723	\$5,292,385	\$1,566,501	\$9,386,455	\$46,257,928
% Allocation	42%	13%	3%	2%	1%	2%	2%	11%	3%	20%	100%

Table 12
City of Santa Barbara
Cost of Service - Capital Allocation

Capital Allocation	Base	Max Day	Max Hour	Fire	Meter	Billing	Recycled Water	Desal	Conservation	General	Total
Source of Supply	100%										100.0%
Storage/Reservoir	51%	39%	0%	10%							100.0%
Treatment Plant and Related Assets	56%	44%	0%								100.0%
Transmission	56%	44%	0%								100.0%
Distribution	31%	24%	30%	10%	5%						100.0%
Pump Stations	37%	28%	35%								100.0%
Firelines/Hydrants				100%							100.0%
Meters					100%						100.0%
Billing related assets						100%					100.0%
Recycled Water related assets							100%				100.0%
General assets										100%	100.0%

Capital Allocation	Base	Max Day	Max Hour	Fire	Meter	Billing	Recycled Water	Desal	Conservation	General	RCLD Total
Source of Supply	\$9,825,847	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$9,825,847
Storage	\$26,136,045	\$20,305,060	\$0	\$5,160,123	\$0	\$0	\$0	\$0	\$0	\$0	\$51,601,228
Treatment Plant and Related Assets	\$28,669,304	\$22,273,146	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$50,942,451
Transmission	\$40,950,233	\$31,814,184	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$72,764,416
Distribution	\$445,265	\$345,926	\$422,720	\$142,813	\$71,407	\$0	\$0	\$0	\$0	\$0	\$1,428,131
Pump Stations	\$2,239,304	\$1,739,713	\$2,125,922	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$6,104,939
Firelines/Hydrants	\$0	\$0	\$0	\$790,111	\$0	\$0	\$0	\$0	\$0	\$0	\$790,111
Meters	\$0	\$0	\$0	\$0	\$12,527,128	\$0	\$0	\$0	\$0	\$0	\$12,527,128
Billing related assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Recycled Water related assets	\$0	\$0	\$0	\$0	\$0	\$0	\$8,462,326	\$0	\$0	\$0	\$8,462,326
General assets	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$12,671,475	\$12,671,475
TOTAL ASSETS	\$108,265,999	\$76,478,029	\$2,548,642	\$6,093,047	\$12,598,535	\$0	\$8,462,326	\$0	\$0	\$12,671,475	\$227,118,053
% Allocation	48%	34%	1%	3%	6%	0%	4%	0%	0%	6%	100%

Table 13
City of Santa Barbara
Cost of Service - Revenue Requirements

	FY 2018		
	Operating	Capital	Total
Revenue Requirements			
O&M Expenses	\$34,965,543		\$34,965,543
CCWA Fixed Expenses	\$6,000,000		\$6,000,000
Existing Debt Service		\$4,982,080	\$4,982,080
Desal Debt Service		\$2,646,377	\$2,646,377
Proposed Debt Service		\$0	\$0
Total Revenue Requirements	\$40,965,543	\$7,628,457	\$48,594,000
Less: Revenue from Other Sources			
Interest Income	(\$310,000)		(\$310,000)
Misc & Other Revenues	(\$3,508,552)		(\$3,508,552)
Total Revenue from Other Sources	(\$3,818,552)	\$0	(\$3,818,552)
Plus: Adjustments			
Adjustments for Midyear Increases			\$0
Adjustments for Net Cash Balance		\$3,894,065	\$3,894,065
Total Adjustments	\$0	\$3,894,065	\$3,894,065
Revenue Requirement from Rates	\$37,146,991	\$11,522,522	\$48,669,514

Table 14
City of Santa Barbara
Billing Components

Customer Class	Annual Use (hcf)	Average Daily Use (hcf/day)	Maximum Day Requirements			Maximum Hour Requirements			Monthly Bills	Equivalent Meters
			In - Tier Peaking	Total Capacity (hcf/day)	Extra Capacity (hcf/day)	In Tier Peaking X System PF	Total Capacity (hcf/hour)	Extra Capacity (hcf/hour)		
Single Family Residential (SFR)	1,567,281	4,294		6,171	1,877		10,095	3,923	17,000	22,408
Tier 1	647,600	1,774	1.17	2,071	297	1.91	3,388	1,317		
Tier 2	698,743	1,914	1.51	2,881	967	2.46	4,713	1,832		
Tier 3	220,937	605	2.01	1,219	614	3.29	1,994	775		
Multi-Family Residential (MFR)	994,707	2,725		3,465	740		5,668	2,203	6,525	11,026
Tier 1	764,025	2,093	1.17	2,444	350	1.91	3,997	1,554		
Tier 2	180,358	494	1.51	744	250	2.46	1,216	473		
Tier 3	50,325	138	2.01	278	140	3.29	454	177		
Commercial/Industrial	893,260	2,447		2,919	472		4,775	1,856	2,723	8,592
Tier 1	763,971	2,093	1.12	2,348	255	1.84	3,841	1,493		
Tier 2	129,289	354	1.61	571	217	2.64	934	363		
Irrigation - Residential	80,577	221		354	133		579	225	479	1,422
Tier 1	65,118	178	1.51	269	90	2.46	439	171		
Tier 2	15,459	42	2.01	85	43	3.29	139	54		
Irrigation - Commercial	17,842	49		82	33		134	52	128	436
Tier 1	11,989	33	1.51	49	17	2.46	81	31		
Tier 2	5,853	16	2.01	32	16	3.29	53	21		
Irrigation - Recreation/Parks/Schools	70,029	192		294	102		481	187	148	735
Tier 1	66,280	182	1.51	273	92	2.46	447	174		
Tier 2	3,748	10	2.01	21	10	3.29	34	13		
Irrigation - Agriculture	29,015	79		120	41		196	76	62	220
Tier 1	28,751	79	1.51	119	40	2.46	194	75		
Tier 2	264	1	2.01	1	1	3.29	2	1		
Recycled Water	355,274	973	1.67	1,622	649	2.73	2,654	1,031	88	919
Fire Line Service	0	0	1.67	0	0	2.73	0	0	524	242
Total	4,007,984	10,981		15,027	4,047		24,581	9,554	27,677	46,000

Table 15 provides an allocation of FY 2018 O&M and Capital revenue requirements, shown in **Table 13**, to each billing component based on O&M and Capital allocations from **Table 11** and **Table 12**, respectively. Additional adjustments to cost components are summarized below:

- General costs are allocated to Base, Max Day, Max Hour, Billing, and Recycled Water components in proportion to each cost component, as general costs cannot be tied to a specific function.
- Public fire costs are allocated to the meter component, as all customers benefit from public fire protection.
- Peak costs, including Max Day and Max Hour, are allocated 98% to the meter component to ensure revenue stability and meet the water enterprise goal of collecting no more than 30% of rate revenue from fixed charges. Meter charges are a reasonable way of recovering peaking costs because they are levied based on the flow capacity of the meter size, with higher capacity meters paying proportionally more.

Once allocated to cost components, costs are divided by billable units to determine a rate per unit for each component.

Table 15
City of Santa Barbara
Allocation of O&M and Capital

	Total (Table 13)	Base	Max Day	Max Hour	Fire	Meter	Billing	Recycled Water	Desal	Conservation	General
Operating Expenses	\$37,146,991	\$15,527,588	\$4,904,933	\$1,149,337	\$676,080	\$473,256	\$632,358	\$737,772	\$4,250,000	\$1,257,964	\$7,537,704
Allocation % (Table 11)		42%	13%	3%	2%	1%	2%	2%	11%	3%	20%
Capital Expenses - Desal Only	\$2,646,377								\$2,646,377		
Capital Expenses	\$8,876,145	\$4,231,212	\$2,988,887	\$99,605	\$238,126	\$492,371	\$0	\$330,722	\$0	\$0	\$495,222
Allocation % (Table 12)		48%	34%	1%	3%	6%	0%	4%	0%	0%	6%
Total Cost	\$48,669,514	\$19,758,800	\$7,893,819	\$1,248,942	\$914,207	\$965,628	\$632,358	\$1,068,493	\$6,896,377	\$1,257,964	\$8,032,926
Allocation of General Costs	\$0	\$5,027,901	\$2,008,692	\$317,811		\$245,717	\$160,912	\$271,893			(\$8,032,926)
Allocation of Public Fire Costs	\$0				(\$746,664)	\$746,664					
Allocation Peak to Meter	\$0		(\$9,704,461)	(\$1,535,417)		\$11,239,878					
Allocation of Base to Meter	\$0	\$0				\$0					
Total Cost of Service	\$48,669,514	\$24,786,701	\$198,050	\$31,335	\$167,543	\$13,197,887	\$793,271	\$1,340,386	\$6,896,377	\$1,257,964	\$0
Total Units of Service		3,652,710 potable hcf	3,398 hcf/day	8,522 hcf/hour	2,905 private fire	549,090 equiv meter	332,124 bills/yr	355,274 recycled hcf	3,652,710 potable hcf	425,875 highest tier hcf	
Total Unit Cost of Service		\$6.79 per hcf	\$58.29 hcf/day	\$3.68 hcf/hour	\$57.67 private fire	\$24.04 equiv meter	\$2.39 per bill	\$3.77 per hcf	\$1.89 per hcf	\$2.95 per hcf	

In **Table 16**, costs are further allocated to customer class by multiplying the billing components for each class in **Table 14** times the appropriate unit rates in **Table 15**. Total costs to be recovered from fixed meter charges amount to \$14,158,700, while variable costs to be recovered from usage charges amounts to \$34,510,813.

Table 16
City of Santa Barbara
Allocation of Costs to Customer Classes

Customer Class	Base ¹	Max Day ²	Max Hour ³	Fire ⁴	Meter ⁵	Billing ⁶	Recycled Water ⁷	Desal ⁸	Conservation ⁹	Total	Fixed ¹⁰	Variable
Single Family Residential (SFR)	\$10,635,312	\$109,432	\$14,426	\$0	\$6,463,020	\$487,249	\$0	\$2,959,051	\$652,611	\$21,321,102	\$6,950,269	\$14,370,832
Multi-Family Residential (MFR)	\$6,749,923	\$43,118	\$8,099	\$0	\$3,180,241	\$187,018	\$0	\$1,878,024	\$148,651	\$12,195,074	\$3,367,259	\$8,827,815
Commercial/Industrial	\$6,061,517	\$27,518	\$6,824	\$0	\$2,478,200	\$78,046	\$0	\$1,686,489	\$381,897	\$10,720,492	\$2,556,246	\$8,164,246
Irrigation - Residential	\$546,782	\$7,754	\$827	\$0	\$410,149	\$13,729	\$0	\$152,131	\$45,663	\$1,177,035	\$423,878	\$753,157
Irrigation - Commercial	\$121,073	\$1,914	\$191	\$0	\$125,756	\$3,669	\$0	\$33,686	\$17,288	\$303,577	\$129,425	\$174,152
Irrigation - Recreation/Parks/Schools	\$475,203	\$5,952	\$687	\$0	\$211,997	\$4,242	\$0	\$132,215	\$11,072	\$841,369	\$216,239	\$625,130
Irrigation - Agriculture	\$196,891	\$2,362	\$281	\$0	\$63,455	\$1,777	\$0	\$54,781	\$781	\$320,326	\$65,232	\$255,094
Recycled Water	\$0	\$0	\$0	\$0	\$265,068	\$2,522	\$1,340,386	\$0	\$0	\$1,607,977	\$267,590	\$1,340,386
Fire Line Service	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$167,543</u>	<u>\$0</u>	<u>\$15,019</u>	<u>\$0</u>	<u>\$0</u>	<u>\$0</u>	<u>\$182,562</u>	<u>\$182,562</u>	<u>\$0</u>
TOTAL	\$24,786,701	\$198,050	\$31,335	\$167,543	\$13,197,887	\$793,271	\$1,340,386	\$6,896,377	\$1,257,964	\$48,669,514	\$14,158,700	\$34,510,813

1 Use times Table 15 cost per potable hcf

2 Table 14 maximum day capacity (hcf/day) times Table 15 rate per unit of potable maximum day capacity (hcf/day)

3 Table 14 maximum hour capacity (hcf/hour) times Table 15 rate per unit of potable maximum hour capacity (hcf/hour)

4 Table 14 annual fire meter equivalents times Table 15 cost per annual fire meter equivalent

5 Table 14 annual non-fire meter equivalents times Table 15 cost per annual non-fire meter equivalent

6 Table 14 total annual bills times Table 15 cost per bill

7 Table 14 recycled use times Table 15 cost per unit of recycled water (hcf)

8 Table 14 use times Table 15 desal cost per potable hcf

9 Highest tier use times Table 15 cost per highest tier hcf

10 Fire, meter, and billing expenses

Table 17 describes the six sources of water that the City utilizes. The City has a diverse supply portfolio, and each water source has differing costs. Operational changes in the amount of water used from the various water source are necessary from year to year for management of reliable water supplies, particularly surrounding drought and emergency periods when some sources are less available and backup supply is needed. While flexible operations in sources helps to ensure reliable water supply, similar variability in water rates from year to year is not desirable. Therefore, BWA recommends calculating potable rates based on the potential yield of each source of potable water supply, subject to capacity and operational constraints, and adjusted proportionally to the City’s FY 2018 projected water demand. The methodology smoothens the changes in water supplies, providing more stability in water rates from year to year.

Table 17
City of Santa Barbara
Water Supply Sources

	Potential Yield, AFY	Adjusted to FY18 Water supply	Adjustment Factor
Water Supply Sources (AF)			
Surface Water			
Lake Cachuma	8,277	3,306	40%
Gibraltar			
Reservoir/Devils Canyon	5,174	2,067	40%
Mission Tunnel	1,125	449	40%
Groundwater	1,110	443	40%
Groundwater - Ortega GWTP	2,000	799	40%
SWP/Purchased Water	3,300	1,318	40%
Desalinated Water	3,125	1,248	40%
Recycled Water	950	950	
TOTAL WATER SUPPLY (AF)	25,061	10,580	
Water Supply (AF)	25,061	10,580	
Water Sales (AF)	9,201	9,201	
Difference between sold and supply	63%	13%	

Note:

Surface water = Cater Treatment cost center
Groundwater = Water Treatment cost center (wellhead treatment)
SWP is purchased thru Central Coast Water Authority (CCWA),
flows into Lake Cachuma and then gets treated at Cater WTP
Recycled water cost center already includes treatment

Table 18 shows a calculation of the cost of water per AF and HCF for each of the City’s potable water sources. The costs include supply, treatment, lab, and supply management.

**Table 18
City of Santa Barbara
Water Supply Analysis
(Projected 2018)**

Source	Supply Costs	Treatment Costs	Lab Costs	Supply Management	Related Capacity	Rate (\$/AF)	Rate (\$/HCF)	Total Cost (\$)	Available Amt (HCF) 13% Water Loss	Supply Unit Rate (\$/HCF)
Lake Cachuma (3,306 AF)									1,253,929	
Cachuma COMB	\$2,300,000				3,306	\$695.73				
Cachuma CCRB	\$600,000				3,306	\$181.50				
Cachuma COMB Dought Expense	\$500,000				3,306	\$151.25				
Cater Water Treatment		\$4,761,967			7,140	\$666.97				
Water Laboratories			\$784,541		7,140	\$109.88				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$2,043.40	\$4.69	\$6,755,195		\$5.39
Gibraltar (2,516 AF)									954,271	
Gibraltar Dam Operations	\$487,199				2,516	\$193.65				
Gibraltar Warren Act Charges	\$0				2,516	\$0.00				
Cater Water Treatment		\$4,761,967			7,140	\$666.97				
Water Laboratories			\$784,541		7,140	\$109.88				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$1,208.58	\$2.77	\$3,040,584		\$3.19
SWP/Purchased Water (1,318 AF)									499,935	
State Water Project - CCWA	\$6,000,000				1,318	\$4,552.25				
Water Purchases	\$100,000				1,318	\$75.87				
State Water Project - CCWA Drought	\$2,000,000				1,318	\$1,517.42				
Cater Water Treatment		\$4,761,967			7,140	\$666.97				

Water Laboratories			\$784,541		7,140	\$109.88				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$7,160.46	\$16.44	\$9,437,700		\$18.88
Ground Water (443 AF)									168,160	
20% Water Treatment (Wells)		\$181,010			443	\$408.29				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$646.36	\$1.48	\$286,557		\$1.70
Groundwater - Ortega GWTP (799 AF)									302,991	
80% Water Treatment (Wells)		\$724,042			799	\$906.41				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$1,144.48	\$2.63	\$914,215		\$3.02
Desalinated Water (1,248 AF)									473,424	
Desalinated Water	\$2,646,377	\$4,250,000			1,248	\$5,525.35				
<u>Other O&M</u>				\$2,292,638	9,630	<u>\$238.07</u>				
Total						\$5,763.42	\$13.23	\$7,193,523		\$15.19
Total								\$27,627,774	3,652,710	\$7.56

The City's 2013 Rate Study established the City's rate structure by defining the various customer classes and tier allotments. The rationale for the tier allotments within each customer class is summarized below:

Single Family Residential (SFR) Tier Allotments:

- Tier 1 (4 HCF/month): Intended for basic health and sanitation needs
- Tier 2 (16 HCF/month): Considered reasonable and efficient irrigation use for an average SFR customer with a household of 3 people, and a landscaped area of 4,000 square feet, under average weather conditions.
- Tier 3 (>16 HCF/month): Reflects discretionary/excessive usage for this customer class. Customers with large lots that exceed average landscaped area are encouraged to get a separate irrigation meter.

Multi-Family Residential (MFR) Tier Allotments:

- Tier 1 (4 HCF/month): Intended for basic health and sanitation needs
- Tier 2 (8 HCF/month): Considered reasonable use for an average MFR dwelling unit. In the 2013 Rate Study, the average water usage for MFR was 5 HCF/month. It has been the City's experience that there is very little water use exceeding MFR Tier 2 allotments, since most of these customers are served by a separate irrigation meter, or have very little irrigated area. A Tier 2 allowance of 8 HCF provides MFR customers efficient water use for indoor needs.
- Tier 3 (>8 HCF/month): Reflects discretionary/excessive usage for this customer class.

Irrigation Meter Tier Allotments:

(Applies to Agriculture, Recreation, and Residential/Commercial Irrigation Meters):

- Tier 1 (monthly budget): Based on monthly landscape budgets calculated based on the landscape area, plant factors and real-time weather data. The monthly irrigation budget represents a reasonable and efficient use based on individual landscape site characteristics.
- Tier 2 (> Tier 1 budgeted use): Reflects discretionary/excessive usage for this customer class.

Commercial Tier Allotments:

- Tier 1 (monthly budget): Based on average usage from January to June for base water needs of the individual business.
- Tier 2 (> Tier 1 budgeted use): Reflects somewhat discretionary usage for this customer class.

Table 19 shows an allocation of the City’s potable water sources to customer classes and tiers based on priority level. Each tier is charged the weighted average cost of water based on the allocated sources. The highest priority customer tiers receive the cheapest sources of water, limited to that tiers percentage of each priorities total demand times the water source (or remaining water source left over from a higher priority).

1. The highest priority use is allocated to tier 1 agriculture (Ag) for efficient agricultural use.
2. The second highest priority use is allocated to recreational (Rec) tier 1, single family residential (SFR) tier 1 and multi-family residential (MFR) tier 1 for essential health and safety purposes.
3. The third highest priority use is allocated to commercial tier 1 for efficient commercial uses.
4. The fourth highest priority use is allocated to tier 2 SFR, tier 2 MFR and tier 1 residential/commercial irrigation for efficient irrigation needs.
5. The fifth highest priority use is allocated to tier 2 commercial, tier 3 SFR, tier 3 MFR, tier 2 Ag, tier 2 Rec and tier 2 residential/commercial irrigation.

Table 19
City of Santa Barbara
Unit Cost

	Groundwater -			Lake	Desalinated	SWP/Purchased	
	Groundwater	Ortega GWTP	Gibraltar	Cachuma	Water	Water	TOTAL
Total Cost	\$286,557	\$914,215	\$3,040,584	\$6,755,195	\$7,193,523	\$9,437,700	\$27,627,774
Available Amount (hcf)	168,160	302,991	954,271	1,253,929	473,424	499,935	3,652,710
Unit Cost (\$/hcf)	\$1.70	\$3.02	\$3.19	\$5.39	\$15.19	\$18.88	\$7.56

	Priority	Usage (hcf)	Groundwater -			Lake	Desalinated	SWP/Purchased	Weighted Avg	Unit
		Groundwater	Ortega GWTP	Gibraltar	Cachuma	Water	Water	TOTAL	Cost ¹	
1	Tier 1 Ag	28,751	28,751					28,751	\$1.70	
2	Tier 1 Rec	66,280	6,252	13,588	42,797	3,643		66,280	\$3.13	
2	Tier 1 SFR	647,600	61,088	132,767	418,150	35,596		647,600	\$3.13	
2	Tier 1 MFR	764,025	72,070	156,636	493,324	41,995		764,025	\$3.13	
3	Tier 1 Commercial	763,971			763,971			763,971	\$5.39	
4	Tier 2 SFR	698,743			298,672	345,952	54,119	698,743	\$11.29	
4	Tier 2 MFR	180,358			77,092	89,296	13,969	180,358	\$11.29	
4	Tier 1 Irrig (Res/Comm)	77,107			32,959	38,176	5,972	77,107	\$11.29	
5	Tier 2 Commercial	129,289					129,289	129,289	\$18.88	
5	Tier 3 SFR	220,937					220,937	220,937	\$18.88	
5	Tier 3 MFR	50,325					50,325	50,325	\$18.88	
5	Tier 2 Ag	264					264	264	\$18.88	
5	Tier 2 Rec	3,748					3,748	3,748	\$18.88	
5	Tier 2 Irrig (Res/Comm)	21,312					21,312	21,312	\$18.88	
		3,652,710	168,160	302,991	954,271	1,253,929	473,424	499,935	3,652,710	

1 The Weighted Average Unit cost is calculated by multiplying the weighted average use of each water source in the tier times the Supply Unit Rate in Table 18

Table 20 shows the total base and desal operating cost of \$31,683,078 to be recovered by potable use. Water unit costs, allocated in **Table 19**, recover supply costs of \$27,627,774. The net delivery cost of \$4,055,304 is the difference between the base cost and supply cost. Dividing the delivery cost by total potable usage of 3,652,710 results in a cost per unit, or “unit delivery cost” of \$1.11.

Table 20
City of Santa Barbara
Unit Cost

Delivery Cost Calculation	Cost of Service	Notes
Total Base Cost	\$31,683,078	base + desal cost
Less: Supply Cost	\$27,627,774	
Net Delivery Cost	\$4,055,304	
Total Potable Usage (hcf)	3,652,710	
Unit Delivery Cost	\$1.11	

Table 21 shows the calculation of the peaking cost by customer class and tier. Peaking costs, or extra-capacity costs, represent costs incurred to meet customer peak demands in excess of base use or average daily demand. The extra capacity that is needed to meet maximum day and maximum hour demands (shown in **Table 14**) is multiplied by the unit cost of that extra capacity (shown in **Table 15**) to arrive at the total peaking costs for each customer class and tier. The total peaking costs is then divided by total projected FY 2018 water use to determine the peaking unit cost applied in proposed volumetric water rates.

Table 21
City of Santa Barbara
Peaking Costs

Peaking Cost Calculation	Max Day Unit Cost	Max Day Extra Capacity	Max Day Costs	Max Hour Unit Cost	Max Hour Extra Capacity	Max Hour Costs	Total Peaking Costs	Potable Use (HCF)	Peaking Unit Cost
Res Tier 1	\$58.29	647	\$37,738	\$3.68	2,870	\$10,554	\$48,292	1,411,625	\$0.03
Res Tier 2/All Irrig* Tier 1	\$58.29	1,455	\$84,786	\$3.68	2,756	\$10,132	\$94,918	1,051,239	\$0.09
Res Tier 3/All Irrig* Tier 2	\$58.29	824	\$48,008	\$3.68	1,040	\$3,825	\$51,833	296,586	\$0.17
Commercial Tier 1	\$58.29	255	\$14,881	\$3.68	1,493	\$5,489	\$20,371	763,971	\$0.03
Commercial Tier 2	\$58.29	217	\$12,637	\$3.68	363	\$1,335	<u>\$13,972</u>	<u>129,289</u>	\$0.11
							\$229,385	3,652,710	

*All Irrigation includes Agriculture, Recreation, Residential, and Commercial Irrigation usage

Conservation Costs

Conservation costs represent the costs related to the City's longstanding Water Conservation Program, which has been in place for decades and has experienced increased activity and workload during the current drought. The cost of the program primarily covers staffing, services, and supplies. The conservation measures implemented by the Water Conservation Program have been evaluated for cost effectiveness based on the avoided cost of additional water supplies. Based on **Table 15**, the conservation unit cost is \$2.95 per hcf. Conservation costs are allocated to all inefficient uses including Residential Tier 3 and Commercial/Irrigation Tier 2.

Water Rates Calculation

Table 22 shows the combined calculation of volumetric charges. Components include the supply unit cost from **Table 19**, the delivery cost from **Table 20**, peaking costs from **Table 21**, and the conservation unit cost from **Table 15**.

Table 23 shows the combined calculation of meter charges. Components include a meter component and billing component. The meter component calculation per meter equivalent and the cost per bill are shown in **Table 15**. The meter component scales in proportion to the flow capacity of the meter size. The billing component is a flat charge added to each monthly bill.

As shown in **Table 24A**, the recommended water rates are increased by approximately 4% in FY 2018/19 and 4% in FY 2019/20 to meet the City's revenue requirements.

Rate Phase In

To smooth out impacts on customers, the rates developed in **Table 22** and **Table 23**, and shown together in **Table 24A**, are phased in over three years. **Table 24B** reflects the final proposed rates. **Table 25** shows that the projected revenues

collected from each customer class and tier based on the **Table 24B** “Phased In” rates are equal to the “Not Phased In” rates developed in **Table 24A** over three years (FY 2017/18 to FY 2019/20).

Table 22
City of Santa Barbara
Volumetric Rates

Customer Class	Tier (hcf/mo)	Supply Unit Cost	Delivery Unit Cost	Peaking Unit Cost	Conservation Unit Cost	Total Rate
SFR						
Tier 1	4	\$3.13	\$1.11	\$0.03	\$0.00	\$4.28
Tier 2	16	\$11.29	\$1.11	\$0.09	\$0.00	\$12.49
Tier 3	16 +	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
MFR						
Tier 1	4	\$3.13	\$1.11	\$0.03	\$0.00	\$4.28
Tier 2	8	\$11.29	\$1.11	\$0.09	\$0.00	\$12.49
Tier 3	8 +	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
Commercial/Industrial						
Tier 1	100% of allocation	\$5.39	\$1.11	\$0.03	\$0.00	\$6.52
Tier 2	All other hcf	\$18.88	\$1.11	\$0.11	\$2.95	\$23.05
Irrigation - Residential						
Tier 1	100% of allocation	\$11.29	\$1.11	\$0.09	\$0.00	\$12.49
Tier 2	All other hcf	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
Irrigation - Commercial						
Tier 1	100% of allocation	\$11.29	\$1.11	\$0.09	\$0.00	\$12.49
Tier 2	All other hcf	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
Irrigation - Recreation/Parks/Schools						
Tier 1	100% of allocation	\$3.13	\$1.11	\$0.09	\$0.00	\$4.33
Tier 2	All other hcf	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
Irrigation - Agriculture						
Tier 1	100% of allocation	\$1.70	\$1.11	\$0.09	\$0.00	\$2.90
Tier 2	All other hcf	\$18.88	\$1.11	\$0.17	\$2.95	\$23.12
Recycled Water						
Tier 1	100% of allocation					\$3.77

Table 23
City of Santa Barbara
Meter Charges

Meter Charges

Meter Size	Meter Ratio	Meter Component	Billing Component	Proposed Charge
5/8"	1.00	\$24.04	\$2.39	\$26.42
3/4"	1.50	\$36.05	\$2.39	\$38.44
1"	2.50	\$60.09	\$2.39	\$62.48
1 1/2"	5.00	\$120.18	\$2.39	\$122.57
2"	8.00	\$192.29	\$2.39	\$194.68
3"	17.50	\$420.63	\$2.39	\$423.02
4"	31.50	\$757.13	\$2.39	\$759.52
6"	65.00	\$1,562.34	\$2.39	\$1,564.72
8"	120.00	\$2,884.31	\$2.39	\$2,886.70
10"	190.00	\$4,566.83	\$2.39	\$4,569.21

Fireline Charges

	Meter Ratio	Meter Component	Billing Component	Proposed Charge
1"	0.01	\$0.52	\$2.39	\$2.91
1 1/2"	0.03	\$1.51	\$2.39	\$3.89
2"	0.06	\$3.21	\$2.39	\$5.60
4"	0.34	\$19.85	\$2.39	\$22.24
6"	1.00	\$57.67	\$2.39	\$60.06
8"	2.13	\$122.90	\$2.39	\$125.29
10"	3.83	\$221.02	\$2.39	\$223.41
12"	6.19	\$357.02	\$2.39	\$359.40

Table 24A
City of Santa Barbara
Water Rates (Not Phased In)

		Current Rates	Water Rates (Not Phased In)					
		(Revised from Notice)	FY 2017/18	% Increase	FY 2018/19	% Increase	FY 2019/20	% Increase
Monthly Water Meter Service Charge*								
Meter Size								
5/8"		\$24.50	\$26.42	8%	\$27.38	4%	\$28.37	4%
3/4"		\$35.60	\$38.44	8%	\$39.83	4%	\$41.28	4%
1"		\$57.80	\$62.48	8%	\$64.74	4%	\$67.09	4%
1 1/2"		\$113.29	\$122.57	8%	\$127.01	4%	\$131.62	4%
2"		\$179.89	\$194.68	8%	\$201.72	4%	\$209.05	4%
3"		\$390.77	\$423.02	8%	\$438.33	4%	\$454.24	4%
4"		\$701.54	\$759.52	8%	\$787.01	4%	\$815.58	4%
6"		\$1,445.18	\$1,564.72	8%	\$1,621.37	4%	\$1,680.22	4%
8"		\$2,666.07	\$2,886.70	8%	\$2,991.20	4%	\$3,099.78	4%
10"		\$4,219.93	\$4,569.21	8%	\$4,734.62	4%	\$4,906.49	4%
Monthly Fire Line Service Charge								
Meter Size								
1"		\$2.76	\$2.91	5%	\$3.01	4%	\$3.12	4%
1 1/2"		\$3.64	\$3.89	7%	\$4.03	4%	\$4.18	4%
2"		\$5.16	\$5.60	8%	\$5.80	4%	\$6.01	4%
4"		\$19.99	\$22.24	11%	\$23.05	4%	\$23.88	4%
6"		\$53.67	\$60.06	12%	\$62.24	4%	\$64.50	4%
8"		\$111.77	\$125.29	12%	\$129.83	4%	\$134.54	4%
10"		\$199.17	\$223.41	12%	\$231.50	4%	\$239.90	4%
12"		\$320.29	\$359.40	12%	\$372.42	4%	\$385.93	4%
Water Service Rates		Monthly Tiers						
SFR								
Tier 1	First 4 hcf	\$4.56	\$4.28	-6%	\$4.43	4%	\$4.59	4%
Tier 2	Next 12 hcf	\$12.97	\$12.49	-4%	\$12.94	4%	\$13.41	4%
Tier 3	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
MFR								
Tier 1	First 4 hcf	\$4.56	\$4.28	-6%	\$4.43	4%	\$4.59	4%
Tier 2	Next 4 hcf	\$12.97	\$12.49	-4%	\$12.94	4%	\$13.41	4%
Tier 3	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
Commercial/Industrial								
Tier 1	100% of allocation	\$6.28	\$6.52	4%	\$6.76	4%	\$7.01	4%
Tier 2	All other hcf	\$23.94	\$23.05	-4%	\$23.88	4%	\$24.75	4%
Irrigation - Residential								
Tier 1	100% of allocation	\$12.97	\$12.49	-4%	\$12.94	4%	\$13.41	4%
Tier 2	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
Irrigation - Commercial								
Tier 1	100% of allocation	\$12.97	\$12.49	-4%	\$12.94	4%	\$13.41	4%
Tier 2	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
Irrigation - Recreation/Parks/Schools								
Tier 1	100% of allocation	\$3.77	\$4.33	15%	\$4.49	4%	\$4.65	4%
Tier 2	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
Irrigation - Agriculture								
Tier 1	100% of allocation	\$3.42	\$2.90	-15%	\$3.01	4%	\$3.12	4%
Tier 2	All other hcf	\$24.27	\$23.12	-5%	\$23.95	4%	\$24.82	4%
Recycled Water	100% of allocation	\$3.02	\$3.77	25%	\$3.91	4%	\$4.05	4%

*Multifamily auxiliary master meters which serve submeters owned and maintained by the City are subject to a monthly operations and maintenance fee not to exceed \$88 per month.

Rate Phase In

To smooth out impacts on customers, the proposed rate increases, shown in **Table 24B**, are phased in over three years. **Table 25** shows that the projected revenues collected from each customer class and tier based on the **Table 24B** “Phased In” rates are equal to the “Not Phased In” rates developed in **Table 24A** over three years (FY 2017/18 to FY 2019/20).

Table 24B
City of Santa Barbara
Water Rates (Phased In, Proposed)

		Current Rates	Phased In, Proposed						
		(Revised from Notice)	FY 2017/18	% Increase	FY 2018/19	% Increase	FY 2019/20	% Increase	
Monthly Water Meter Service Charge*									
Meter Size									
5/8"		\$24.50	\$25.89	6%	\$27.36	6%	\$28.92	6%	
3/4"		\$35.60	\$37.65	6%	\$39.81	6%	\$42.10	6%	
1"		\$57.80	\$61.15	6%	\$64.70	6%	\$68.45	6%	
1 1/2"		\$113.29	\$119.91	6%	\$126.92	6%	\$134.34	6%	
2"		\$179.89	\$190.43	6%	\$201.59	6%	\$213.40	6%	
3"		\$390.77	\$413.74	6%	\$438.05	6%	\$463.80	6%	
4"		\$701.54	\$742.81	6%	\$786.51	6%	\$832.79	6%	
6"		\$1,445.18	\$1,530.25	6%	\$1,620.34	6%	\$1,715.72	6%	
8"		\$2,666.07	\$2,823.06	6%	\$2,989.30	6%	\$3,165.32	6%	
10"		\$4,219.93	\$4,459.38	6%	\$4,712.41	6%	\$4,979.80	6%	
Monthly Fire Line Service Charge									
Meter Size									
1"		\$2.76	\$2.88	4%	\$3.01	4%	\$3.14	4%	
1 1/2"		\$3.64	\$3.83	5%	\$4.03	5%	\$4.24	5%	
2"		\$5.16	\$5.47	6%	\$5.79	6%	\$6.14	6%	
4"		\$19.99	\$21.45	7%	\$23.02	7%	\$24.70	7%	
6"		\$53.67	\$57.76	8%	\$62.15	8%	\$66.89	8%	
8"		\$111.77	\$120.38	8%	\$129.65	8%	\$139.63	8%	
10"		\$199.17	\$214.58	8%	\$231.18	8%	\$249.06	8%	
12"		\$320.29	\$345.13	8%	\$371.89	8%	\$400.73	8%	
Water Service Rates		Monthly Tiers							
SFR									
Tier 1	First 4 hcf	\$4.56	\$4.44	-3%	\$4.44	0%	\$4.44	0%	
Tier 2	Next 12 hcf	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%	
Tier 3	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
MFR									
Tier 1	First 4 hcf	\$4.56	\$4.44	-3%	\$4.44	0%	\$4.44	0%	
Tier 2	Next 4 hcf	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%	
Tier 3	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
Commercial/Industrial									
Tier 1	100% of allocation	\$6.28	\$6.52	4%	\$6.76	4%	\$7.01	4%	
Tier 2	All other hcf	\$23.94	\$23.91	0%	\$23.91	0%	\$23.91	0%	
Irrigation - Residential									
Tier 1	100% of allocation	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%	
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
Irrigation - Commercial									
Tier 1	100% of allocation	\$12.97	\$12.96	0%	\$12.96	0%	\$12.96	0%	
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
Irrigation - Recreation/Parks/Schools									
Tier 1	100% of allocation	\$3.77	\$4.11	9%	\$4.48	9%	\$4.88	9%	
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
Irrigation - Agriculture									
Tier 1	100% of allocation	\$3.42	\$3.01	-12%	\$3.01	0%	\$3.01	0%	
Tier 2	All other hcf	\$24.27	\$23.98	-1%	\$23.98	0%	\$23.98	0%	
Recycled Water			\$3.02	\$3.42	13%	\$3.88	13%	\$4.40	13%

*Multifamily auxiliary master meters which serve submeters owned and maintained by the City are subject to a monthly operations and maintenance fee not to exceed \$88 per month.

Table 25
City of Santa Barbara
Rate Phase In

	Current Rates		FY 2017/18			FY 2018/19			FY 2019/20			3-Year Totals	
	Units	Revenue	Units	Not Phased In Revenue	Phased In Revenue	Units	Not Phased In Revenue	Phased In Revenue	Units	Not Phased In Revenue	Phased In Revenue	Not Phased In Revenue	Phased In Revenue
Monthly Water Meter Service Charge													
Meter Size													
5/8"	20,029	\$5,888,526	20,092	\$6,371,029	\$6,242,631	20,156	\$6,622,689	\$6,618,293	20,220	\$6,883,697	\$7,016,491	\$19,877,415	\$19,877,415
3/4"	1,357	\$579,710	1,361	\$627,841	\$614,831	1,365	\$652,481	\$652,073	1,369	\$678,148	\$691,565	\$1,958,469	\$1,958,469
1"	3,926	\$2,723,074	3,938	\$2,952,474	\$2,889,794	3,950	\$3,068,676	\$3,066,693	3,962	\$3,189,727	\$3,254,391	\$9,210,877	\$9,210,877
1 1/2"	793	\$1,078,068	797	\$1,172,241	\$1,146,829	801	\$1,220,773	\$1,219,945	805	\$1,271,449	\$1,297,690	\$3,664,463	\$3,664,463
2"	887	\$1,914,749	890	\$2,079,138	\$2,033,799	893	\$2,161,665	\$2,160,225	896	\$2,247,706	\$2,294,485	\$6,488,509	\$6,488,509
3"	35	\$164,123	35	\$177,667	\$173,769	35	\$184,099	\$183,982	35	\$190,781	\$194,795	\$552,547	\$552,547
4"	21	\$176,788	21	\$191,399	\$187,189	21	\$198,328	\$198,202	21	\$205,526	\$209,862	\$595,253	\$595,253
6"	16	\$277,475	16	\$300,427	\$293,809	16	\$311,302	\$311,104	16	\$322,602	\$329,418	\$934,332	\$934,332
8"	3	\$95,979	3	\$103,921	\$101,630	3	\$107,683	\$107,615	3	\$111,592	\$113,952	\$323,196	\$323,196
10"	-	\$0	-	\$0	\$0	-	\$0	\$0	-	\$0	\$0	\$0	\$0
Monthly Fire Line Service Charge													
Meter Size													
1"	0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	\$0	\$0
1 1/2"	0	\$0	0	\$0	\$0	0	\$0	\$0	0	\$0	\$0	\$0	\$0
2"	174	\$10,774	174	\$11,684	\$11,418	174	\$12,107	\$12,100	174	\$12,549	\$12,823	\$36,340	\$36,340
4"	239	\$57,331	239	\$63,793	\$61,522	239	\$66,102	\$66,018	239	\$68,488	\$70,843	\$198,383	\$198,383
6"	83	\$53,455	83	\$59,822	\$57,526	83	\$61,988	\$61,906	83	\$64,242	\$66,620	\$186,052	\$186,052
8"	25	\$33,531	25	\$37,588	\$36,113	25	\$38,949	\$38,895	25	\$40,362	\$41,890	\$116,899	\$116,899
10"	2	\$4,780	2	\$5,362	\$5,150	2	\$5,556	\$5,548	2	\$5,758	\$5,977	\$16,676	\$16,676
12"	<u>1</u>	<u>\$3,843</u>	<u>1</u>	<u>\$4,313</u>	<u>\$4,142</u>	<u>1</u>	<u>\$4,469</u>	<u>\$4,463</u>	<u>1</u>	<u>\$4,631</u>	<u>\$4,809</u>	<u>\$13,413</u>	<u>\$13,413</u>
	27,591	\$13,062,207	27,677	\$14,158,700	\$13,860,150	27,764	\$14,716,867	\$14,707,062	27,851	\$15,297,257	\$15,605,612	\$44,172,824	\$44,172,824
Water Service Rates													
SFR													
Tier 1	695,457	\$3,168,544	647,600	\$2,769,937	\$2,872,873	667,028	\$2,956,315	\$2,959,059	687,039	\$3,153,510	\$3,047,831	\$8,879,762	\$8,879,762
Tier 2	643,224	\$8,342,615	698,743	\$8,726,140	\$9,052,449	719,705	\$9,313,287	\$9,324,023	741,297	\$9,940,788	\$9,603,743	\$27,980,215	\$27,980,215
Tier 3	153,967	\$3,736,774	220,937	\$5,107,326	\$5,298,107	227,565	\$5,450,978	\$5,457,050	234,392	\$5,817,614	\$5,620,761	\$16,375,917	\$16,375,917
MFR													
Tier 1	759,429	\$3,460,002	764,025	\$3,267,912	\$3,389,353	786,946	\$3,487,796	\$3,491,033	810,554	\$3,720,443	\$3,595,764	\$10,476,151	\$10,476,151
Tier 2	160,315	\$2,079,284	180,358	\$2,252,367	\$2,336,593	185,768	\$2,403,919	\$2,406,690	191,341	\$2,565,888	\$2,478,891	\$7,222,174	\$7,222,174
Tier 3	27,596	\$669,766	50,325	\$1,163,342	\$1,206,798	51,835	\$1,241,618	\$1,243,002	53,390	\$1,325,130	\$1,280,292	\$3,730,091	\$3,730,091
Commercial/Industrial													
Tier 1	698,669	\$4,389,273	763,971	\$4,984,229	\$4,979,244	786,890	\$5,319,597	\$5,320,667	810,497	\$5,681,585	\$5,685,500	\$15,985,411	\$15,985,411
Tier 2	152,055	\$3,640,185	129,289	\$2,980,097	\$3,091,488	133,167	\$3,180,616	\$3,184,233	137,162	\$3,394,767	\$3,279,760	\$9,555,480	\$9,555,480
Irrigation - Residential													
Tier 1	60,999	\$791,154	65,118	\$813,217	\$843,627	67,072	\$867,936	\$868,936	69,084	\$926,414	\$895,004	\$2,607,568	\$2,607,568
Tier 2	15,741	\$382,039	15,459	\$357,356	\$370,705	15,923	\$381,401	\$381,826	16,400	\$407,055	\$393,281	\$1,145,812	\$1,145,812
Irrigation - Commercial													
Tier 1	12,418	\$161,068	11,989	\$149,723	\$155,322	12,349	\$159,798	\$159,982	12,719	\$170,564	\$164,781	\$480,086	\$480,086
Tier 2	4,574	\$111,008	5,853	\$135,299	\$140,353	6,028	\$144,403	\$144,563	6,209	\$154,115	\$148,900	\$433,817	\$433,817
Irrigation - Recreation/Parks/Schools													
Tier 1	55,202	\$208,110	66,280	\$287,213	\$272,261	68,269	\$306,539	\$305,551	70,317	\$326,973	\$342,912	\$920,724	\$920,724
Tier 2	11,492	\$278,917	3,748	\$86,650	\$89,887	3,861	\$92,481	\$92,584	3,977	\$98,701	\$95,361	\$277,832	\$277,832
Irrigation - Agriculture													
Tier 1	26,802	\$91,664	28,751	\$83,509	\$86,642	29,613	\$89,128	\$89,241	30,502	\$95,165	\$91,918	\$267,801	\$267,801
Tier 2	831	\$20,168	264	\$6,110	\$6,338	272	\$6,521	\$6,528	280	\$6,959	\$6,724	\$19,590	\$19,590
Recycled Water													
	<u>338,356</u>	<u>\$1,021,836</u>	<u>355,274</u>	<u>\$1,340,386</u>	<u>\$1,216,000</u>	<u>373,038</u>	<u>\$1,458,354</u>	<u>\$1,447,059</u>	<u>391,690</u>	<u>\$1,586,343</u>	<u>\$1,722,023</u>	<u>\$4,385,083</u>	<u>\$4,385,083</u>
	3,817,128	\$32,552,407	4,007,984	\$34,510,813	\$35,408,040	4,135,329	\$36,860,686	\$36,882,027	4,266,850	\$39,372,015	\$38,453,447	\$110,743,514	\$110,743,514
Total Revenue		\$45,614,614		\$48,669,514	\$49,268,190		\$51,577,553	\$51,589,089		\$54,669,272	\$54,059,060	\$154,916,339	\$154,916,339
Difference					\$598,676			\$11,536			-\$610,212		