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City of Millbrae
621 Magnolia Avenue
Millbrae, CA 94030

Re: Water Financial Plan & Rate Study

Bartle Wells Associates is pleased to submit the attached *Water Financial Plan & Rate Study*. The study develops long-term financial projections and calculates water rates designed to equitably recover the costs of providing service over the next five years. The recommended rates are designed to meet the City's operational and capital funding needs, comply with legal requirements, and be fair to all customers.

Prior to this study, the City last adjusted its water rates in July 2013 and has not adopted any water rate increases in almost four years. During the same period, the City has faced a 67% increase in the SFPUC's wholesale water rates coupled with large declines in water sales as customers reduced water use by almost 25% in response to the drought. The water utility is currently operating in deficit mode as revenues have fallen substantially below the cost of providing service.

Substantial rate increases are now needed to restore financial stability, catch-up with prior SFPUC wholesale water rate increases and keep up with projected additional wholesale increases in future years, keep rates aligned with future operating costs, and provide funding for high-priority capital improvements to the City's aging water system. Proposed rate increases are phased in gradually over five years to minimize the annual impact on City water customers, with a larger initial rate increase recommended the first year to eliminate annual budget deficits and help restore financial stability.

I enjoyed working with the City on this assignment and appreciate the collaboration, assistance, and input received throughout the project. Please contact me anytime if you have questions about the recommendations in this report or other related issues.

Sincerely,

BARTLE WELLS ASSOCIATES

Alex Handlers, CIPMA
Principal/Vice-President

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ES EXECUTIVE SUMMARY

The City of Millbrae provides water service to residents and businesses located within and adjacent to the City. The City relies on imported water purchased from the San Francisco Public Utility Commission (SFPUC) for 100% of the community's water supply. Financially, the water utility is operated as an independent enterprise that relies primarily on revenues from water rates to fund the costs of providing service. As such, rates must be set at levels adequate to fund the costs of operating and maintaining the water system, pay for wholesale water supplied by the SFPUC, and fund necessary capital improvements to keep the City's aging water system in safe and reliable operating condition.

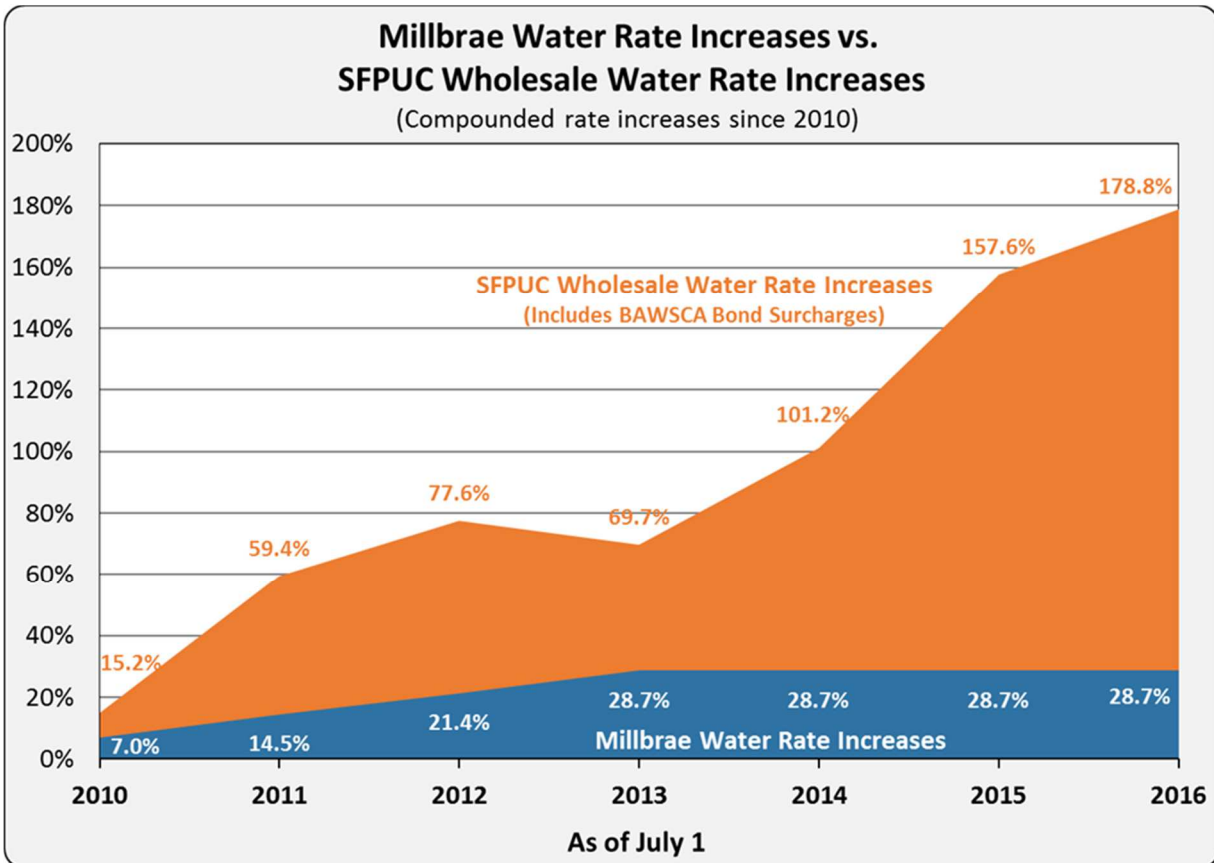
The City last adjusted its water rates in July 2013 and has not adopted any water rate increases in almost four years. During the same period, the City has faced substantial increases in the SFPUC's wholesale water rates, large declines in water sales due to conservation, and the resulting need to virtually eliminate the City's ongoing capital improvement program due to lack of available funding. Currently, the City's water utility is operating in deficit mode as revenues have fallen substantially below the cost of providing service.

In 2016, the City retained Bartle Wells Associates (BWA) to conduct a water rate study. Key goals of the study include recommending new water rates designed to a) recover the cost of providing service, b) be fair and equitable to all customers, c) comply with the legal requirements of Proposition 218.

The City's water utility is currently facing a number of financial challenges that will require significant rate increases in upcoming years. These financial challenges include:

- **Wholesale Water Rates Increases** –The SFPUC is in the process of completing a \$4.8 billion capital program of seismic upgrades and reliability enhancements to the aging Hetch-Hetchy regional water system that provides water supply to many Bay Area communities. To help fund these improvements, the SFPUC has more than doubled its wholesale water rates since 2010 and more than quadrupled its wholesale rates since 2005. The SFPUC has projected it will increase wholesale rates by an additional 27% over the next five years.
- **Address Infrastructure Deficiencies & Replace Aging Water Tanks & Pipelines** - Many of the City's water distribution pipelines are over 70 years old and are in need of rehabilitation and replacement. Additionally, the City has inadequate water storage capacity and needs to rebuild three aging water tanks and bring them up to modern seismic standards. New revenues are needed to gradually restore funding for capital improvements to address existing deficiencies, improve safety and reliability, and replace aging water pipelines.
- **Decline in Water Sales** – Water sales have declined by over 25% since calendar year 2013, the State's benchmark year for measuring water conservation. The decline in water consumption has resulted in a corresponding decline in water sales revenues as well as a reduction in the water bills paid by customers who have conserved.

The following chart compares the City's compounded water rate increases since 2010 vs. the SFPUC's wholesale rate increases. The City's rates have not kept up with wholesale rate increases and revenues recovered from water rates are now substantially below the cost of service.

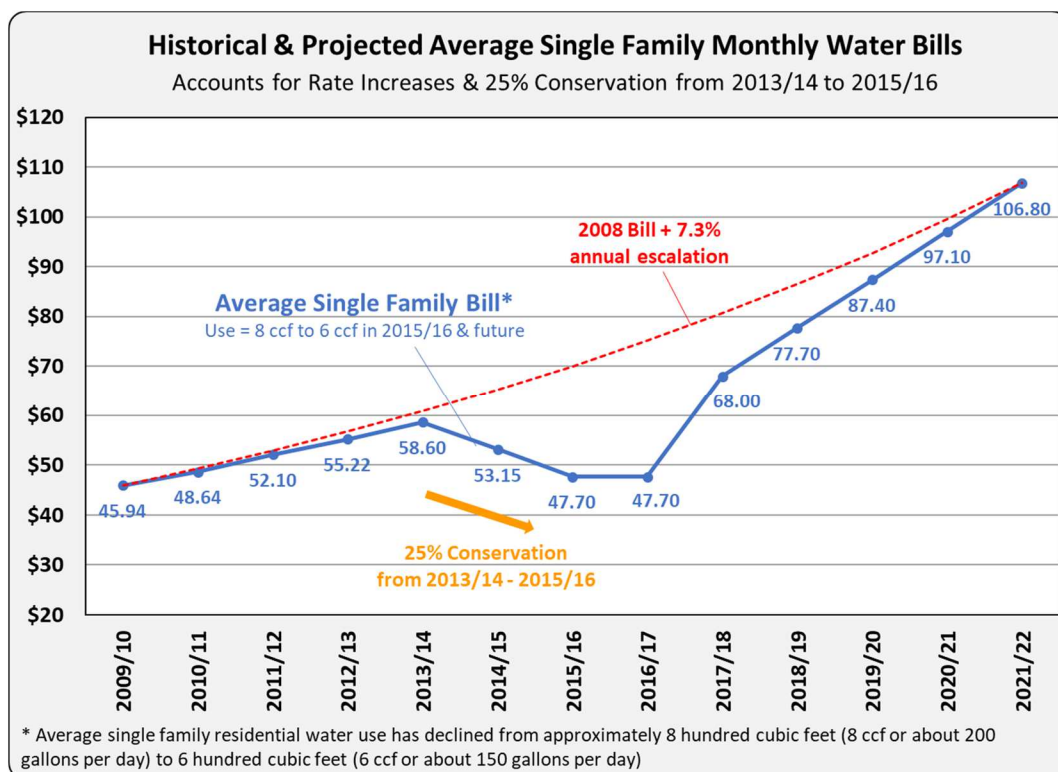


BWA developed financial projections to evaluate revenue requirements and rate increases. The projections indicate that substantial water rate increases are needed in upcoming years to restore financial stability and fund the City's costs of providing service.

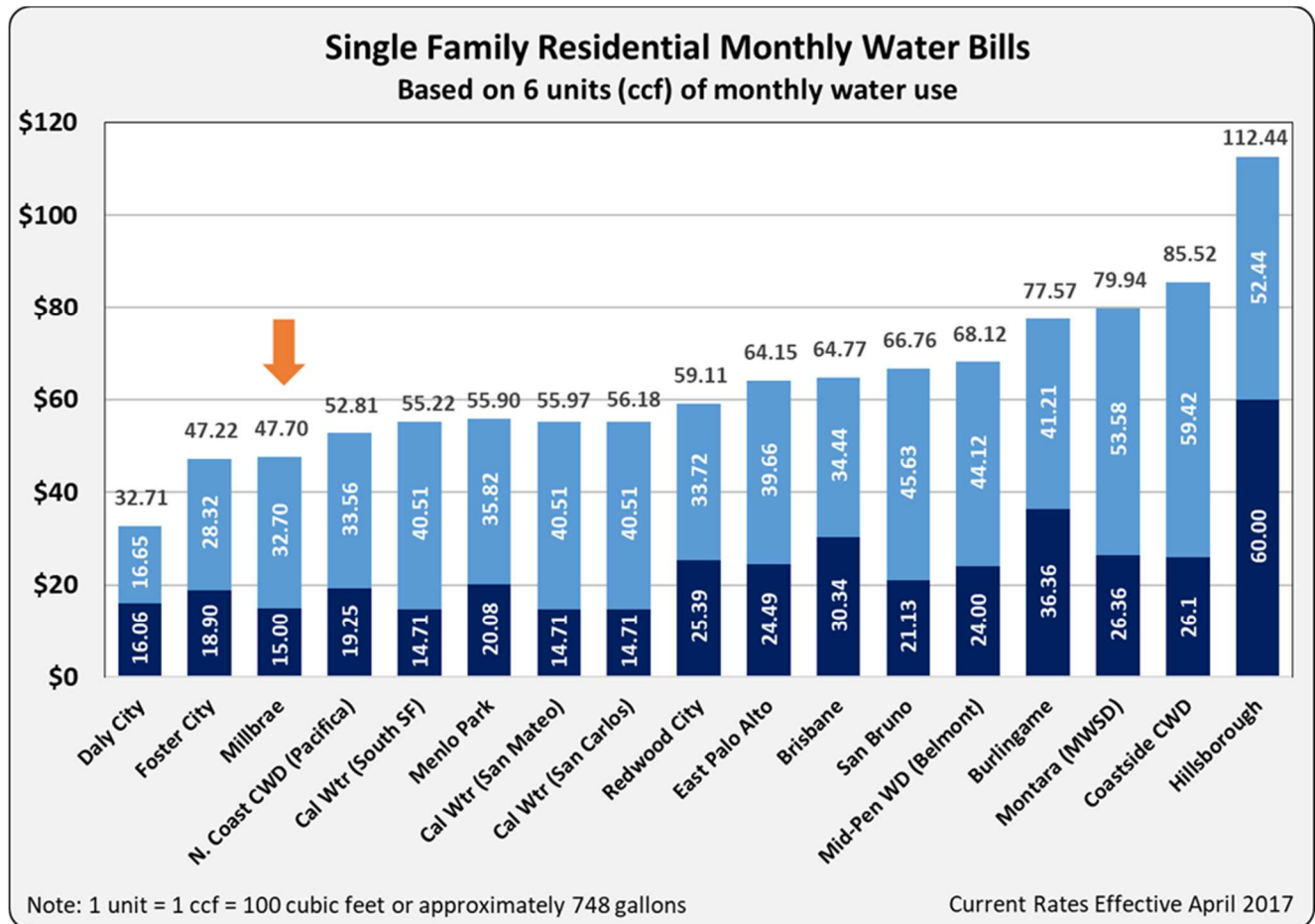
The table on the following page shows a 5-year projection of water rates. The proposed rate increases are phased in as gradually as possible, but include a larger initial increase to help restore financial stability and take a larger step toward catching up with prior SFPUC wholesale rate increases. The proposed increases include some minor modifications to the City's water rate structure designed to improve equity.

Proposed Water Rates						
Current Rates		Proposed Rates Effective on or After				
Effective Date	Effective since <i>July 1, 2013</i>	July 1 2017	July 1 2018	July 1 2019	July 1 2020	July-1 2021
FIXED MONTHLY SERVICE CHARGE						
<i>Fixed monthly charge based on meter size</i>						
Meter Size						
3/4-inch	\$15.00	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00
1-inch	22.30	25.00	28.13	31.25	34.38	37.50
1-1/2 inch	36.60	50.00	56.25	62.50	68.75	75.00
2-inch	59.50	80.00	90.00	100.00	110.00	120.00
3-inch	111.70	150.00	168.75	187.50	206.25	225.00
4-inch	163.30	250.00	281.25	312.50	343.75	375.00
6-inch	296.80	500.00	562.50	625.00	687.50	750.00
8-inch	525.60	800.00	900.00	1,000.00	1,100.00	1,200.00
10-inch	842.10	1,150.00	1,293.75	1,437.50	1,581.25	1,725.00
Fire Service Charge						
Per Connection	\$24.40	\$32.53	\$36.60	\$40.67	\$44.74	\$48.81
QUANTITY CHARGE						
<i>Billed per hundred cubic feet (ccf) of metered water use (1 ccf = 748 gallons = 1 unit)</i>						
All Water Use	\$5.45	\$8.00	\$9.20	\$10.40	\$11.60	\$12.80

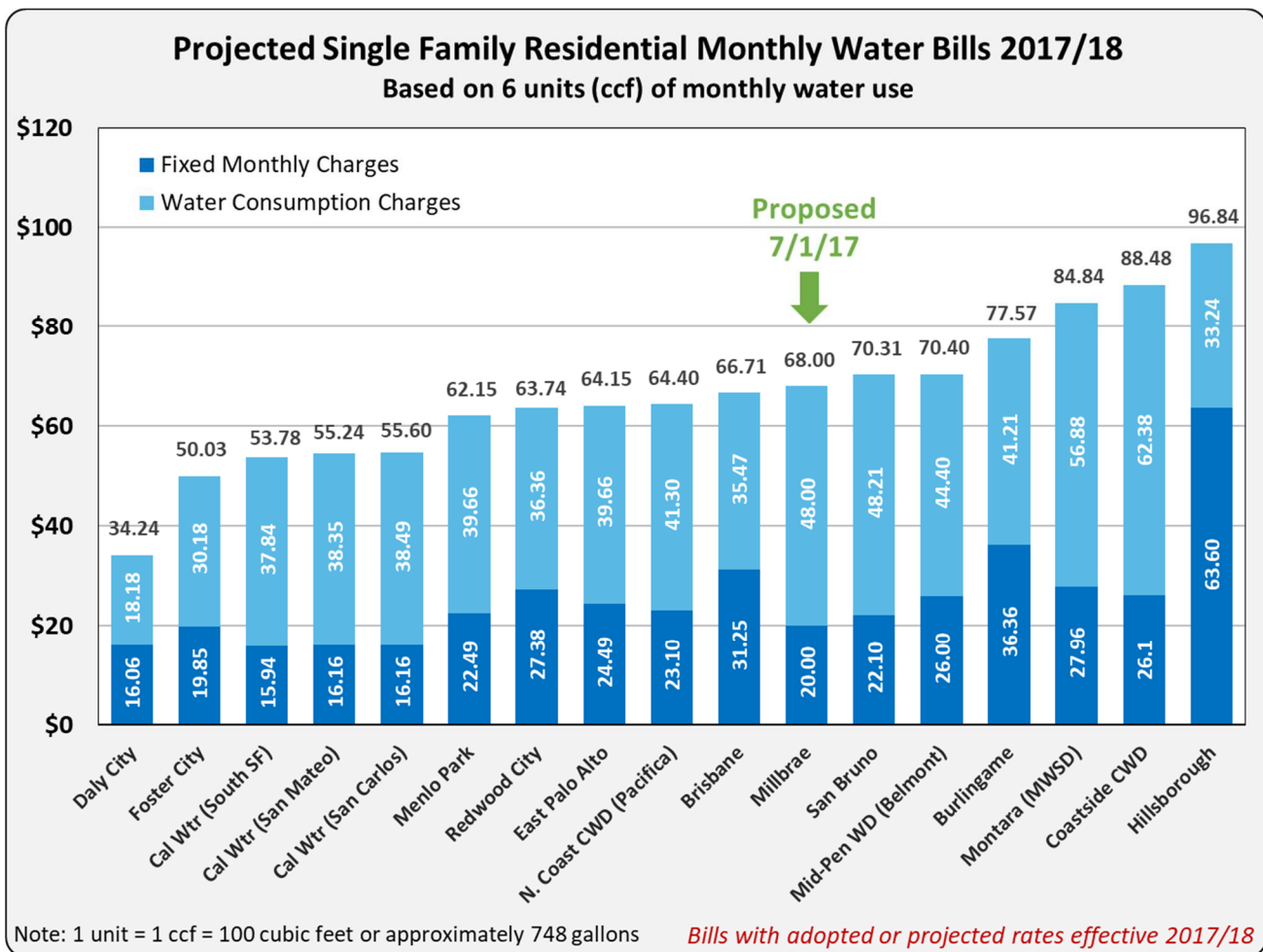
While the proposed rates represent substantial increases over the next 5 years, it is important to put the billing impacts in longer-term perspective. The following chart shows historical and projected typical single family residential monthly charges. The proposed rates will result in a longer-term average annual bill increase of approximately 7.3% accounting for historical and projected water rates as well as a decline in average single family water consumption.



Five to ten years ago, the City's water rates were in the upper-middle range compared to other regional agencies. However, with no rate increases over the past four years, the City's water rates have not only fallen behind the cost of service, but have also fallen behind the rates charged by other regional agencies, most of which have implemented substantial rate increases over the past four years. The following table compares the City's water rates for a typical single family home using an average of 6 hundred cubic feet (ccf) of water per month. This level of usage is equivalent to a little under 150 gallons per day. As shown, the City's water rates are currently low compared to other regional agencies.



With the proposed rate increases, the City's water bills for a typical single family home are projected to end up in the upper-middle range compared to other regional agencies, similar to how the City previously compared. The table below compares the City's projected monthly charges for fiscal year 2017/18 to the anticipated charges of other agencies. Many other agencies have already adopted water rate increases for upcoming years or are in the process of moving forward with rate increases. As such, this table reflects best estimates of what some other agencies are planning for the upcoming fiscal year. Many regional agencies are facing similar financial challenges to Millbrae, including wholesale water rate increases, substantial decreases in water sales, and the need to increase funding for rehabilitation and replacement of aging water system infrastructure.



1 BACKGROUND & OBJECTIVES

1.1 Background

The City of Millbrae is located in northern San Mateo County, California, approximately 15 miles south of downtown San Francisco. The City has a population of approximately 23,100. The City provides water service to residents and businesses located within the City and some adjacent areas. The City's water utility has a predominantly residential customer base, with residential customers accounting for approximately 92% of total accounts and 70% of water consumption.

The City owns and operates a water distribution system that includes 11 pressure zones, 6 pumps (with 2 pumps at each of 3 pump stations), 4 operational water storage tanks, and almost 70 miles of water distribution pipelines.

The City relies on imported water from the San Francisco Public Utility Commission (SFPUC) for 100% of the community's water supply. The City obtains its water from 5 SFPUC supply turnouts. Millbrae is a member of the Bay Area Water Supply and Conservation Agency (BAWSCA) which represents the collective interests of over 25 agencies that obtain water supply from the SFPUC.

Financially, the water utility is operated an independent enterprise fund that relies primarily on revenues from water rates to fund the costs of providing service. As such, rates must be set at levels adequate to fund the costs of operating and maintaining the water system, pay for wholesale water supplied by the SFPUC, and fund necessary capital improvements to keep the City's aging water system in good operating condition.

The City last adjusted its water rates in July 2013 and has not adopted any increases in almost four years despite substantial increases in the wholesale water rates charged by SFPUC. Large increases in the wholesale water rates coupled with no City rate increases and a substantial decline in water sales due to drought and water conservation have led to annual budget deficits. The City's water utility is currently operating in deficit mode despite significantly reducing the water utility's ongoing capital improvement program in response to deteriorating financial health.

Substantial rate increases are needed to restore financial stability, fund the escalating costs of wholesale water supply, and provide adequate funding for capital improvements to the aging water system to ensure the City can continue to provide safe and reliable water service.

1.2 Rate Study Objectives

In 2016, the City retained Bartle Wells Associates (BWA) to conduct a water rate study. Key goals and objectives of the study include developing water rates that:

- Recover the costs of providing water service, including operating, capital, and water supply funding needs;
- Are fair and equitable to all customers;
- Are easy to understand and implement;
- Comply with the legal requirements of California Constitution, Article 13D, Section 6 (established by Proposition 218);
- Support the water utility's long-term operational and financial stability.

This report summarizes key findings and recommendations for water rates over the next five years.

2 WATER RATES

2.1 Current & Historical Water Rates

Table 1 shows a schedule of water rates since July 2010. From 2010 to 2013, the City implemented gradual annual rate increases to help keep revenues in line with the costs of providing water service. The City last increased rates effective July 2013 and has not adjusted rates in almost four years.

Table 1. Historical & Current Water Rates

Effective Date	2010 Jul 1	2011 Jul 1	2012 Jul 1	2013 Jul 1	2014 Jul 1	2015 Jul 1	2016 Jul 1
Rate Increase % (Appro	7%	7%	6%	6%	<i>No Rate Increases Over past 3 Years</i>		
					0%	0%	0%
FIXED MONTHLY SERVICE CHARGE							
Meter Size							
3/4"	\$12.40	\$13.30	\$14.10	\$15.00	\$15.00	\$15.00	\$15.00
1"	18.49	19.80	21.00	22.30	22.30	22.30	22.30
1-1/2"	30.30	32.50	34.50	36.60	36.60	36.60	36.60
2"	49.40	52.90	56.10	59.50	59.50	59.50	59.50
3"	92.80	99.30	105.30	111.70	111.70	111.70	111.70
4"	135.70	145.20	154.00	163.30	163.30	163.30	163.30
6"	246.80	264.10	280.00	296.80	296.80	296.80	296.80
8"	437.10	467.70	495.80	525.60	525.60	525.60	525.60
10"	700.30	749.40	794.40	842.10	842.10	842.10	842.10
Universal Life Support	9.30	10.00	10.50	11.25	11.25	11.25	11.25
Fire Service (All Connections)	20.40	21.80	23.10	24.40	24.40	24.40	24.40
QUANTITY CHARGE (\$ per ccf)							
All Water Use	\$4.53	\$4.85	\$5.14	\$5.45	\$5.45	\$5.45	\$5.45

The City's water rates include two components:

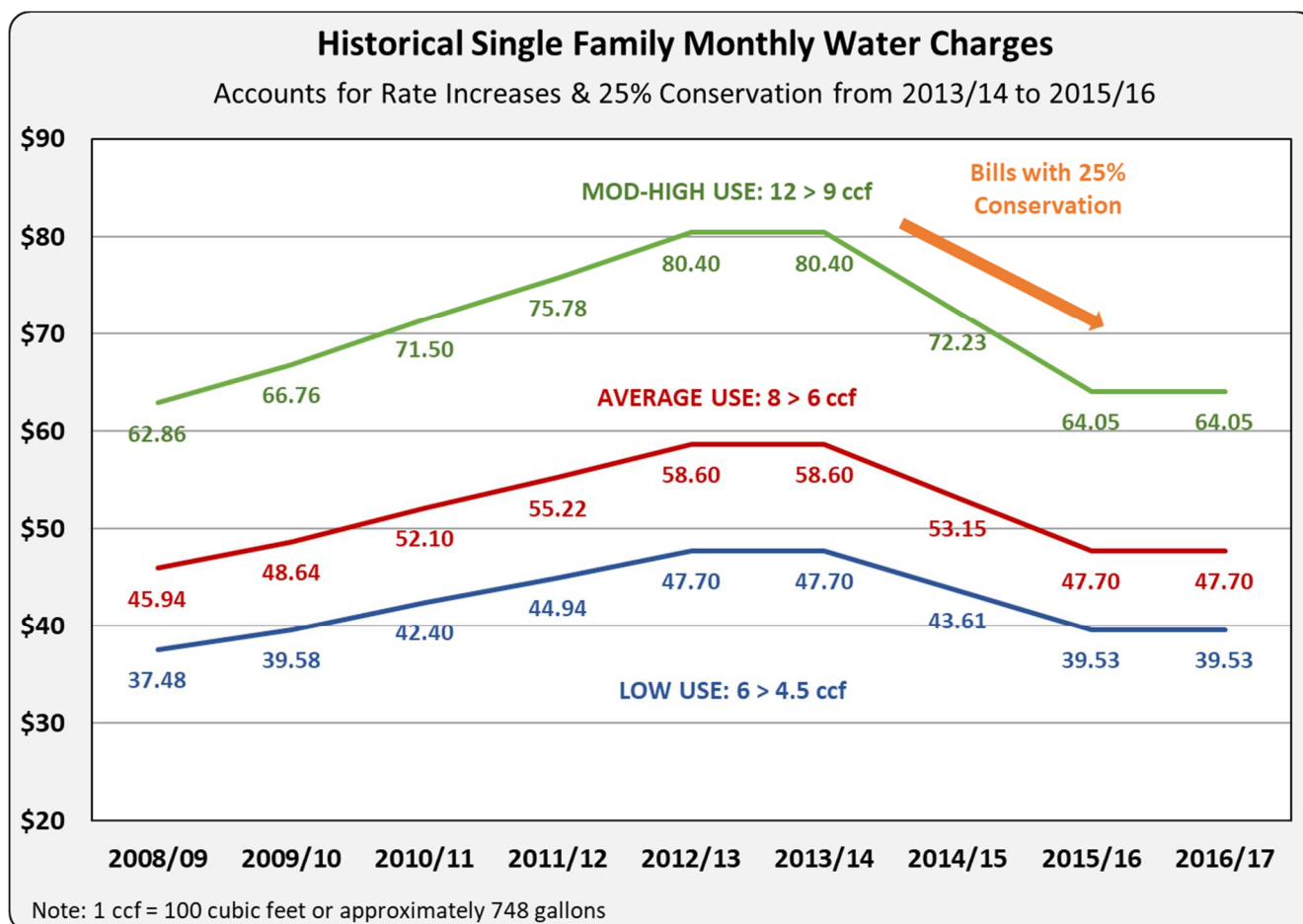
- A **Fixed Monthly Service Charge** that varies based on meter size. This charge is levied independent of water use and recovers a portion of the City's fixed costs for providing service. The City incurs substantial costs to assure that water is available at all times to meet customer needs on demand. The Fixed Monthly Charge varies by meter size, with larger meters paying higher charges based on the increased capacity needs and demand placed on the water system. In 2015/16, the City's fixed service charges generated roughly 24% of total rate revenues.

- Volumetric **Water Quantity Charges** billed based on metered water consumption. The City currently levies a uniform charge of \$5.45 per unit on all water use. Water Quantity Charges are billed per hundred cubic feet (ccf), with 1 ccf or unit equal to approximately 748 gallons of water. Hence the City's current rate equates to slightly under \$0.73 per hundred gallons (0.73 cents per gallon). In 2015/16, the City's Quantity Charges generated roughly 76% of total rate revenues.

The City's uniform Water Quantity Charges provide substantial conservation incentive. From an economic perspective, it is the marginal cost of water that provides disincentive to purchase an additional unit of water. The proposed water rate increases will increase conservation incentive in upcoming years.

Figure 1 shows a history of monthly water charges for single family homes with a range of use. Water consumption has decreased substantially in recent years as customers have cut water use in response to California's multi-year drought. Average monthly use per single family home has decreased almost 30% from approximately 8 ccf (roughly average use from 2010/11 through 2013/14) to 5.7 ccf in the prior fiscal year 2015/16. This decrease in water use has resulted in a significant decrease in both water sales revenues as well as the water bills of customers who conserved. On average, single family residential water bills are lower than they were 6 to 7 years ago.

Figure 1: Average Single Family Monthly Water Charges

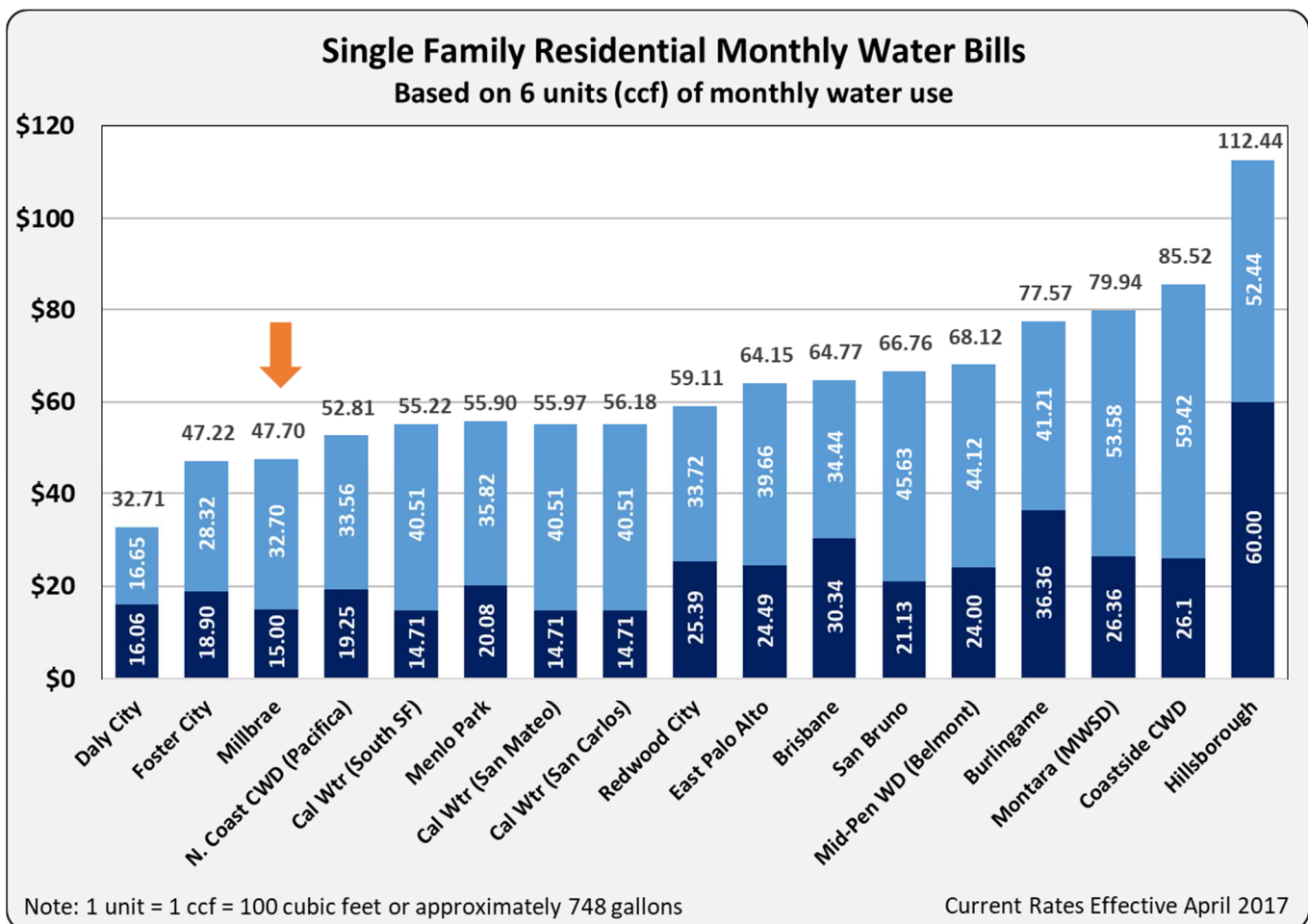


The City bills customers bi-monthly (once every two months) for water service on a combined water and sewer utility bill. This results in a less frequent, but higher combined utility bill, than other agencies that bill monthly, only provide water or sewer service, or collect sewer service charges on the property tax rolls.

2.2 Regional Water Rate Survey

Figure 2 shows a survey of monthly regional water bills for a typical single family home with typical monthly water use of 6 ccf, which is equivalent to almost 150 gallons per day. (Note: average monthly water use for a single family home is currently approximately = 5.7 ccf per month.) Five to ten years ago, the City's water rates were in the upper-middle range compared to other agencies throughout San Mateo County. Today, the City's water rates are among the lowest in the County as most other agencies have adopted substantial rate increases over the past few years while Millbrae has not. Many regional agencies are facing similar financial challenges to Millbrae, including wholesale water rate increases, substantial decreases in water sales, and the need to increase funding for rehabilitation and replacement of aging water system infrastructure.

Figure 2: Monthly Single Family Residential Water Bill Survey



3 WATER ACCOUNTS, SUPPLY & DEMAND

3.1 Water Accounts

The City provides water service to residential and commercial customers in the City and adjacent areas. The water utility currently serves approximately 6,583 total accounts (including fire service and temporary connections). Residential customers account for 92% of total accounts with the bulk of these residential accounts consisting of single family homes.

Table 2. Accounts by Customer Class

	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
RESIDENTIAL						<u>Beginning</u>
Single Family	5,744	5,767	5,753	5,752	5,764	5,775
Duplex	81	81	82	84	86	85
Multi-Family	<u>184</u>	<u>185</u>	<u>186</u>	<u>189</u>	<u>192</u>	<u>191</u>
Subtotal	6,009	6,033	6,021	6,025	6,042	6,051
COMMERCIAL/OTHER						
City Millbrae	28	28	29	27	28	28
Schools	15	16	15	16	16	16
Churches	8	8	8	8	8	8
Commercial	250	248	249	244	244	246
Restaurants	45	45	48	49	49	49
Bars	4	4	4	4	4	4
Irrigation	<u>85</u>	<u>83</u>	<u>83</u>	<u>87</u>	<u>87</u>	<u>88</u>
Subtotal	435	432	436	435	437	439
FIRE SERVICE/TEMPORARY CONNECTIONS						
Fire Service	89	88	90	91	91	91
Temp Meter	<u>5</u>	<u>7</u>	<u>4</u>	<u>4</u>	<u>3</u>	<u>2</u>
Subtotal	94	95	94	95	94	93
TOTAL	6,538	6,560	6,551	6,555	6,573	6,583

3.2 Water Consumption

Figure 3 and Table 3 show historical water consumption for the past 10 fiscal years. As shown on the chart, water consumption decreased by approximately one-third over the decade including an approximately 24% decrease over the past 2 years.

Figure 3: Historical Water Consumption

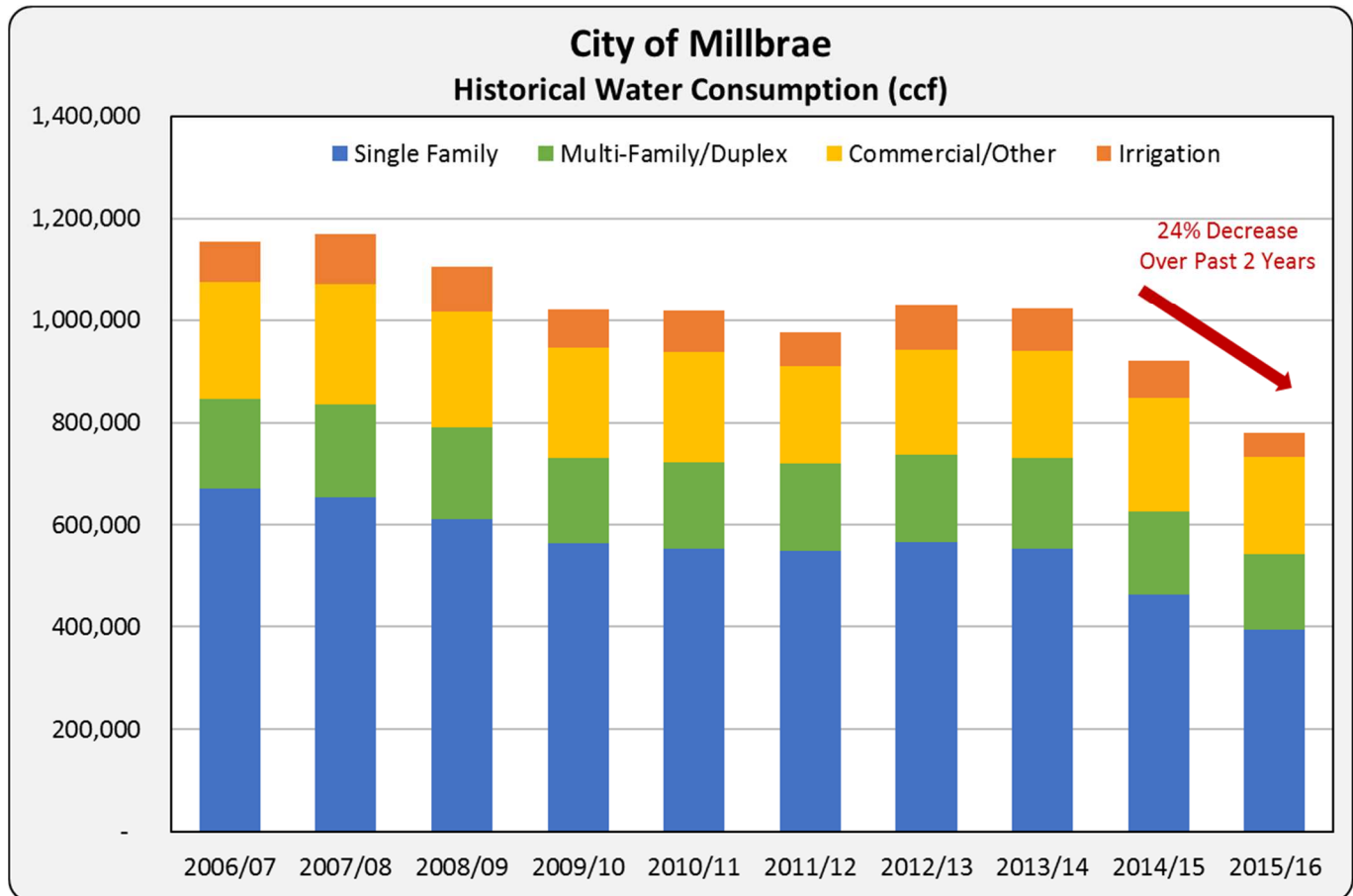


Table 3. Historical Water Consumption by Customer Class

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
RESIDENTIAL										
Single Family	670,339	654,007	612,441	563,919	553,027	549,640	566,543	554,519	465,343	393,854
Duplex	11,652	11,824	11,045	11,230	10,804	9,812	10,027	9,822	9,391	8,577
Multi-Family	<u>163,897</u>	<u>168,957</u>	<u>167,045</u>	<u>155,914</u>	<u>158,408</u>	<u>160,622</u>	<u>161,266</u>	<u>166,842</u>	<u>152,716</u>	<u>139,962</u>
Subtotal	845,888	834,788	790,531	731,063	722,239	720,074	737,836	731,183	627,450	542,393
Annual Change %		-1.3%	-5.3%	-7.5%	-1.2%	-0.3%	2.5%	-0.9%	-14.2%	-13.6%
COMMERCIAL/OTHER										
City Millbrae	7,655	8,025	8,779	7,971	6,669	5,516	5,983	5,271	3,587	2,596
Schools	39,432	37,311	38,459	36,306	31,307	27,138	33,449	45,186	51,427	23,717
Churches	2,818	2,195	2,183	3,098	2,272	2,049	2,038	1,988	2,125	1,750
Commercial	118,150	125,404	109,393	108,181	113,581	106,843	111,001	104,728	101,813	84,899
Restaurants	60,429	61,537	63,007	57,707	60,289	47,945	49,077	49,381	58,846	76,425
Bars	894	1,069	822	569	367	492	565	650	800	891
Irrigation	78,829	99,369	88,942	74,097	80,918	65,551	88,356	84,344	72,645	47,125
Fire Service	69	110	465	1,394	127	10	41	80	279	142
Temp Meter	<u>834</u>	<u>866</u>	<u>2,462</u>	<u>153</u>	<u>391</u>	<u>260</u>	<u>1,277</u>	<u>605</u>	<u>2,378</u>	<u>88</u>
Subtotal	309,110	335,886	314,512	289,476	295,921	255,804	291,787	292,233	293,900	237,633
Annual Change %		8.7%	-6.4%	-8.0%	2.2%	-13.6%	14.1%	0.2%	0.6%	-19.1%
TOTAL	1,154,998	1,170,674	1,105,043	1,020,539	1,018,160	975,878	1,029,623	1,023,416	921,350	780,026
Annual Change %		1.4%	-5.6%	-7.6%	-0.2%	-4.2%	5.5%	-0.6%	-10.0%	-15.3%

The City purchases 100% of its water supply from the SFPUC. Table 4 compares historical water consumption and wholesale water purchases. Over the past 5 fiscal years, wholesale water purchases from the SFPUC have exceeded water usage by an average of approximately 9.4%, which is within industry norms. This difference represents a combination of unbilled water use (such as for system flushing and maintenance), system loss (from pipeline leaks and breakages), and meter inaccuracies (the City provides service to over 6,500 water meters, which lose accuracy as they age and tend to underreport actual usage).

The City's water supply is guaranteed by an Individual Supply Guarantee (ISG) from the SFPUC pursuant to a Water Supply Agreement between BAWSCA and SFPUC. The City's ISG is 1,537,100 ccf per year, or approximately 3.15 million gallons per day (mgd). Over the past 5 years, the City's wholesale water purchases have ranged from a little below 60% to almost 75% of the City's ISG.

Based on information provided in the 2015 Urban Water Management Plan, the City anticipates experiencing a gradual rise in water demand over the next 25 years. Although expansion of Millbrae's service area is limited due to geographical constraints, the City is projected to experience an increase in population and business growth with the development of the Millbrae Station Area Specific Plan and potential other redevelopment. However, even with the projected growth in demand, the City anticipates it can meet the water supply needs of its customer base during normal years with its ISG. However, the

potential always exists for a future reduction in wholesale water supply such as during emergencies and periods of severe water supply shortages.

Table 4. Water Consumption vs. Wholesale Water Purchases

	JUL/AUG	SEP/OCT	NOV/DEC	JAN/FEB	MAR/APR	MAY/JUN	TOTAL
Water Consumption (ccf)							
2011/12	190,911	214,518	164,030	134,778	128,822	142,819	975,878
2012/13	212,213	222,836	165,390	123,155	129,513	176,516	1,029,623
2013/14	216,317	224,990	173,287	145,107	117,692	146,023	1,023,416
2014/15	199,338	179,227	158,299	121,122	121,205	142,159	921,350
2015/16	143,985	155,579	130,663	107,266	109,358	133,175	780,026
SFPUC Wholesale Water Purchases (ccf)							
2011/12	224,472	228,485	151,741	138,294	110,324	180,938	1,034,254
2012/13	242,793	232,999	152,141	128,777	147,290	209,147	1,113,147
2013/14	244,664	227,771	185,504	161,882	124,348	190,573	1,134,742
2014/15	223,154	199,446	141,673	130,941	137,587	158,248	991,049
2015/16	178,014	164,028	142,378	125,295	131,902	158,168	899,785

SFPUC water purchases have exceeded water sales by an average of 9.4% over the past 5 fiscal years.

California recently experienced one of the most serious droughts on record and subsequently established various water reduction and reporting requirements for urban water suppliers including the City. Millbrae was required to reduce per capita water consumption by at least 16% from calendar year 2013 and achieved substantially higher levels of conservation from its customer base. The water cutback requirements mandated by the State Water Resources Control Board (SWRCB) during the drought were subsequently rescinded and replaced with water supply “stress tests”, which were also recently rescinded following the Governor’s declaration ending the drought state of emergency on April 7, 2017. However, the SWRCB’s water use reporting requirements and prohibitions against wasteful practices continue to remain in effect as the SWRCB works on transitioning to a permanent framework for water conservation.

Table 5 on the following page compares water consumption over the prior two fiscal years to the City’s water use during the calendar year 2013, which was used as the State’s benchmark for measuring water conservation. Compared to use in 2013, residential use decreased over 27% (with single family use declining over 30%) and total water consumption decreased by a little over 25%.

Table 5. Water Conservation Estimates

	Water Use (ccf)		Change from 2013	
	Base 2013	2015/16	hcf	%
RESIDENTIAL				
Single Family	568,512	393,854	(174,658)	-30.7%
Duplex	10,090	8,577	(1,513)	-15.0%
Multi-Family	<u>166,775</u>	<u>139,962</u>	<u>(26,813)</u>	<u>-16.1%</u>
Subtotal	745,377	542,393	(202,984)	-27.2%
COMMERCIAL/OTHER				
City Millbrae	5,507	2,596	(2,911)	-52.9%
Schools	41,782	23,717	(18,065)	-43.2%
Churches	2,011	1,750	(261)	-13.0%
Commercial	105,976	84,899	(21,077)	-19.9%
Restaurants	50,767	76,425	25,658	50.5%
Bars	571	891	320	56.0%
Irrigation	91,309	47,125	(44,184)	-48.4%
Fire Service	50	142	92	-
Temp Meter	<u>428</u>	<u>88</u>	<u>(340)</u>	<u>-</u>
Subtotal	298,401	237,633	(60,768)	-20.4%
TOTAL	1,043,778	780,026	(263,752)	-25.3%

Table 6 shows a 10-year history of average single family residential water consumption. Over the past decade, average monthly single family water use has declined by a cumulative 42%, including approximately a 29% decrease in the past two fiscal years alone.

Table 6. Average Single Family Residential Water Use

	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16
Annual Water Use (ccf)										
Single Family	670,339	654,007	612,441	563,919	553,027	549,640	566,543	554,519	465,343	393,854
Billed Accounts										
Single Family	5,678	5,635	5,687	5,716	5,744	5,744	5,767	5,753	5,752	5,764
Average Use per Account (ccf)										
Annual	118	116	108	99	96	96	98	96	81	68
Monthly	9.8	9.7	9.0	8.2	8.0	8.0	8.2	8.0	6.7	5.7
Annual Change %		-1.7%	-7.2%	-8.4%	-2.4%	-0.6%	2.7%	-1.9%	-16.1%	-15.5%
Cumulative Change %		-1.7%	-8.8%	-16.4%	-18.4%	-18.9%	-16.8%	-18.4%	-31.5%	-42.1%

The following chart shows water use by bi-monthly billing period over the past four fiscal years. As shown, water use during the peak-use months of July-October has decreased substantially more than water use during the wetter, winter months signifying a larger decrease in outdoor water use. Water use metered and billed in a month represents consumption from the prior two-month billing period.

Water use from the peak bi-monthly billing periods from July to October decreased by 32.1% from 2013/14 to 2015/16, while water use during the lower use billing periods from January to April decreased by 17.6%. Overall, water consumption declined by almost 24% over the prior two fiscal years.

Figure 4: Historical Water Consumption

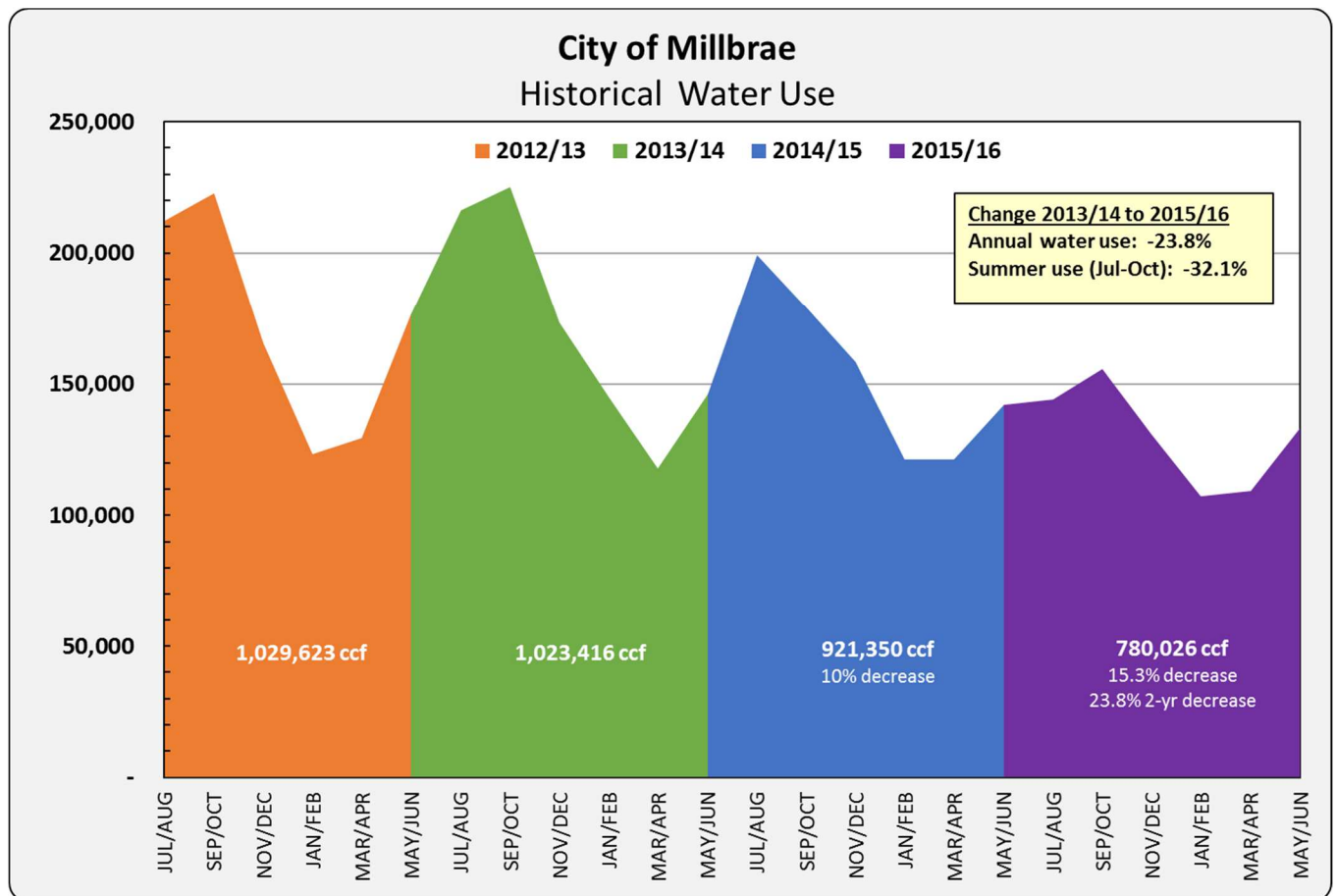


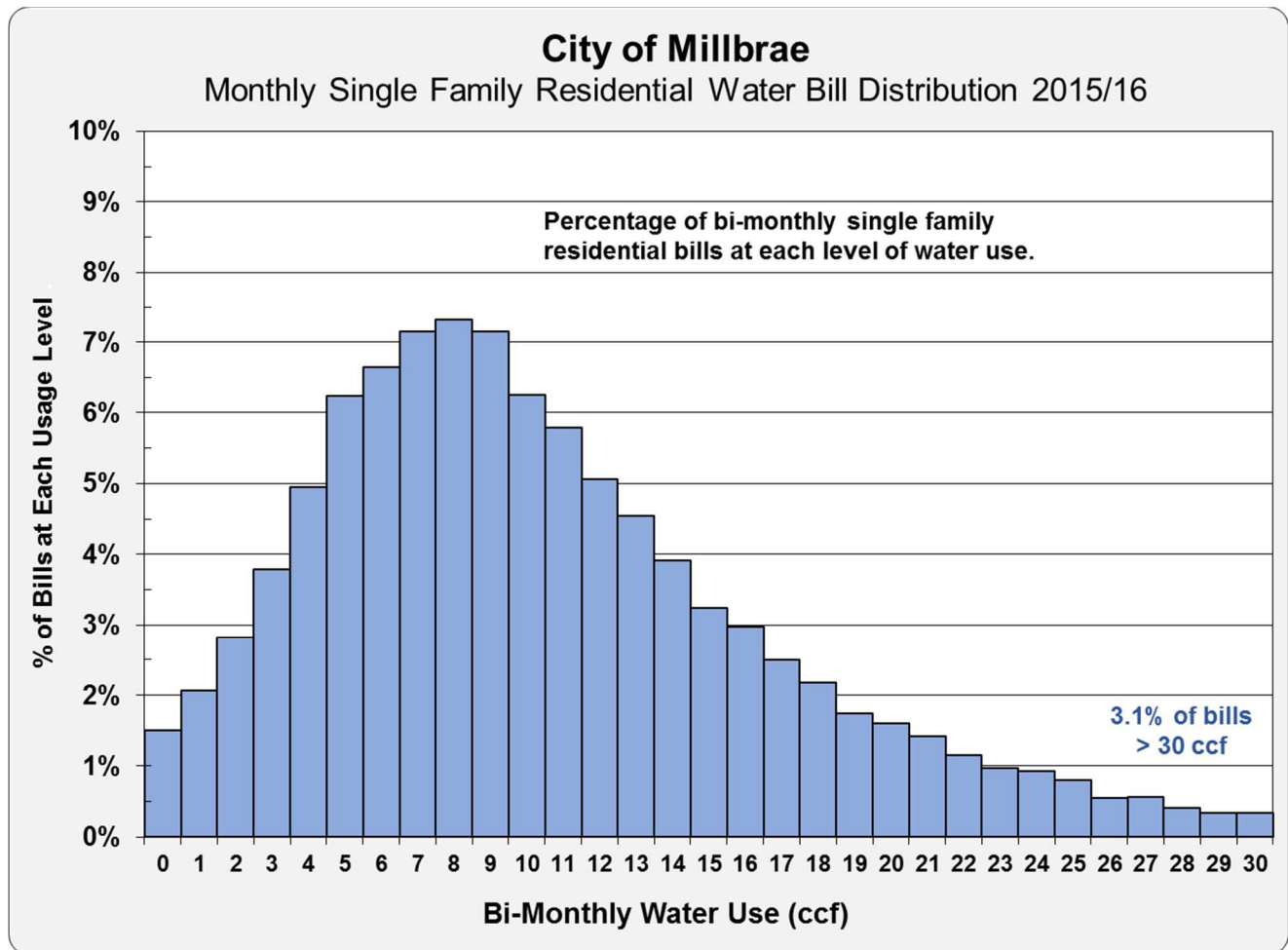
Table 7 on the following page shows a breakdown of Single Family Residential water bills for fiscal year 2015/16 based on level of bi-monthly water use. The data shows the distribution of bills at different levels of usage. For example, bills with bi-monthly water use up to 10 ccf accounted for 55.9% of total Single Family Residential bills in 2015/16. The table also shows the volume and share of water billed up to each level of use. For example, water consumption up to 10 ccf accounted for 68.9% of total billed Single Family Residential usage in 2015/16. Based on the data, the median bill had 10 ccf of water use per bi-monthly billing period, or 5 ccf per month, while the average bill had 11.4 ccf of water use per bi-monthly billing period, or 5.7 ccf per month.

Table 7. Single Family Residential Water Use Analysis 2015/16

Bi-Monthly Use (ccf)	Number of Bills				Water Use (ccf)		Use Through Break	
	In Block	% of Total	Cumulative	Cumulative %	In Block	% of Ttl	Use (ccf)	% of Ttl
0	521	1.5%	521	1.5%	0	0.0%	0	0.0%
1	716	2.1%	1,237	3.6%	716	0.2%	34,063	8.6%
2	974	2.8%	2,211	6.4%	1,948	0.5%	67,410	17.1%
3	1,309	3.8%	3,520	10.2%	3,927	1.0%	99,783	25.3%
4	1,713	5.0%	5,233	15.1%	6,852	1.7%	130,847	33.2%
5	2,155	6.2%	7,388	21.4%	10,775	2.7%	160,198	40.6%
6	2,299	6.6%	9,687	28.0%	13,794	3.5%	187,394	47.5%
7	2,473	7.2%	12,160	35.2%	17,311	4.4%	212,291	53.8%
8	2,536	7.3%	14,696	42.5%	20,288	5.1%	234,715	59.5%
9	2,471	7.1%	17,167	49.6%	22,239	5.6%	254,603	64.5%
10	2,163	6.3%	19,330	55.9%	21,630	5.5%	272,020	68.9%
11	2,000	5.8%	21,330	61.7%	22,000	5.6%	287,274	72.8%
12	1,751	5.1%	23,081	66.7%	21,012	5.3%	300,528	76.2%
13	1,572	4.5%	24,653	71.3%	20,436	5.2%	312,031	79.1%
14	1,354	3.9%	26,007	75.2%	18,956	4.8%	321,962	81.6%
15	1,119	3.2%	27,126	78.4%	16,785	4.3%	330,539	83.8%
16	1,028	3.0%	28,154	81.4%	16,448	4.2%	337,997	85.7%
17	864	2.5%	29,018	83.9%	14,688	3.7%	344,427	87.3%
18	753	2.2%	29,771	86.1%	13,554	3.4%	349,993	88.7%
19	601	1.7%	30,372	87.8%	11,419	2.9%	354,806	89.9%
20	554	1.6%	30,926	89.4%	11,080	2.8%	359,018	91.0%
21	492	1.4%	31,418	90.8%	10,332	2.6%	362,676	91.9%
22	399	1.2%	31,817	92.0%	8,778	2.2%	365,842	92.7%
23	336	1.0%	32,153	93.0%	7,728	2.0%	368,609	93.4%
24	323	0.9%	32,476	93.9%	7,752	2.0%	371,040	94.0%
25	277	0.8%	32,753	94.7%	6,925	1.8%	373,148	94.6%
26	192	0.6%	32,945	95.3%	4,992	1.3%	374,979	95.0%
27	196	0.6%	33,141	95.8%	5,292	1.3%	376,618	95.5%
28	140	0.4%	33,281	96.2%	3,920	1.0%	378,061	95.8%
29	119	0.3%	33,400	96.6%	3,451	0.9%	379,364	96.2%
30	117	0.3%	33,517	96.9%	3,510	0.9%	380,548	96.5%
31	116	0.3%	33,633	97.3%	3,596	0.9%	381,615	96.7%
32	105	0.3%	33,738	97.6%	3,360	0.9%	382,566	97.0%
33	74	0.2%	33,812	97.8%	2,442	0.6%	383,412	97.2%
34	68	0.2%	33,880	98.0%	2,312	0.6%	384,184	97.4%
35	67	0.2%	33,947	98.2%	2,345	0.6%	384,888	97.6%
36	66	0.2%	34,013	98.3%	2,376	0.6%	385,525	97.7%
37	56	0.2%	34,069	98.5%	2,072	0.5%	386,096	97.9%
38	49	0.1%	34,118	98.7%	1,862	0.5%	386,611	98.0%
39	55	0.2%	34,173	98.8%	2,145	0.5%	387,077	98.1%
40	44	0.1%	34,217	98.9%	1,760	0.4%	387,488	98.2%
41	40	0.1%	34,257	99.1%	1,640	0.4%	387,855	98.3%
42	18	0.1%	34,275	99.1%	756	0.2%	388,182	98.4%
43	30	0.1%	34,305	99.2%	1,290	0.3%	388,491	98.5%
44	20	0.1%	34,325	99.3%	880	0.2%	388,770	98.5%
45	22	0.1%	34,347	99.3%	990	0.3%	389,029	98.6%
46	19	0.1%	34,366	99.4%	874	0.2%	389,266	98.7%
47	22	0.1%	34,388	99.4%	1,034	0.3%	389,484	98.7%
48	16	0.0%	34,404	99.5%	768	0.2%	389,680	98.8%
49	10	0.0%	34,414	99.5%	490	0.1%	389,860	98.8%
50	6	0.0%	34,420	99.5%	300	0.1%	390,030	98.9%
51-75	137	0.4%	34,557	99.9%	8,022	2.0%	391,877	99.3%
76-100	10	0.0%	34,567	100.0%	848	0.2%	392,400	99.5%
101+	17	0.0%	34,584	100.0%	3,832	1.0%	394,532	100.0%
Total	34,584	100.0%			394,532	100.0%		

The following chart graphically shows the distribution of bi-monthly Single Family Residential water bills from 2015/16.

Figure 5: Single Family Residential Bill Distribution 2015/16



4 LEGAL REQUIREMENTS

4.1 Constitutional Rate Requirements

The California Constitution includes two key articles that impact the City's water rates: Article 10 and Article 13D. The water rates developed in this study were designed to be consistent with both of these constitutional mandates as well as various provisions of the California Water Code and Government Code that support and add further guidance for implementing these constitutional requirements. In accordance with the constitutional provisions, the proposed rates are designed to a) recover the City's cost of providing water service, b) recover revenues in proportion to the cost for serving each customer, and c) promote conservation and discourage waste.

4.1.1 Article 13D, Section 6 (Proposition 218)

Proposition 218 was adopted by California voters in 1996 and added Articles 13C and 13D to the California Constitution. Article 13D, Section 6 governs property-related charges, which the California Supreme Court subsequently ruled includes ongoing utility system charges such as water, sewer, and garbage rates. Article 13D, Section 6 establishes both a) procedural requirements for imposing or increasing property-related charges, and b) substantive requirements for those charges. Article 13D requires voter approval for new or increased property-related charges but exempts rates for water, sewer, and garbage service from this voting requirement.

Procedural Requirements

In order to comply with the procedural requirements for increasing a property-related charge, agencies must:

- Mail a notice to all affected property-owners informing them of a) the proposed rate increases, b) the basis for increases, and c) the date, time, and location of a Public Hearing at which the proposed rates will be considered for adoption. The City also mailed to the service address in cases where the property owner had a different address.
- Hold a Public Hearing on the proposed rate increases not less than 45 days after the notice is mailed. Most agencies schedule the Public Hearing during a regularly-scheduled meeting of their governing body.
 - BWA recommends that the City establish a clear structure for the Public Hearing to help make the process easy for Councilmembers and the public to follow and ensure the process goes as smoothly as possible.
- The proposed rate increases are subject to "majority protest" and cannot be adopted if written protests are received from more than 50% of affected parcels prior to the close of the public hearing, with one protest counted per parcel.

- BWA generally recommends agencies take a lenient approach to counting written protests at the Public Hearing to demonstrate a good-faith effort to account for every protest, even if some protests do not comply with all of the legal requirements for such notices.
- Assuming there is no majority protest, agencies have the flexibility to adopt rates at or below the levels included in the Proposition 218 Notice. Subsequently, after rates have been adopted by the Proposition 218 process, agencies have future discretion to implement rates at or below the levels initially adopted, such as if future expenses come in substantially lower than projected. However, agencies cannot increase rates above levels adopted without going through the Proposition 218 process for any additional rate increases.

Substantive Requirements

The substantive requirements of Article 13D, Section 6 require property-related charges, such as the City's water and sewer rates, to meet the following conditions:

- 1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
- 2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
- 4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question.
- 5) No fee or charge may be imposed for general governmental services, such as police or fire services, where the service is available to the public at large in substantially the same manner as it is to property owners.

4.1.2 Article 10, Section 2

In addition, the City also works to further the policies established by Article 10, Section 2 of the California Constitution. This Article was established by voter-approval in 1976 and requires water rights holders to maximize the beneficial use of water, prevent waste, and encourage conservation. Section 2 states that:

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.

While this section does not directly refer to water rates or charges, some water retailers have referenced this provision as encouraging conservation-based pricing, such as tiered water rates or higher levels of cost recovery from usage-based charges for water consumption.

4.1.3 Legal Guidance from the Courts

A number of appellate court decisions have helped clarify the legal interpretation of Proposition 218. This section does not summarize every case regarding Proposition 218, but simply highlights some relevant issues from key cases regarding Proposition 218 and utility rates.

Capistrano Taxpayers Association v. City of San Juan Capistrano (2015)

This relatively recent appellate court ruling clarified that tiered water rates are permissible provided an agency can provide justification that the rates reasonably reflect the cost of providing water service to each tier. Soon after the court made its ruling in 2015, various media outlets incorrectly reported that the ruling prohibits California agencies from implementing conservation-oriented tiered water rates. During the court proceedings, the City of San Juan Capistrano fought the plaintiff's charges – mainly that its rates violated the proportionality requirement of Proposition 218 – on a number of grounds, but never provided any cost justification to support its tiered water rates. Devoid of any cost-based justification for the rate tiers, the court essentially had no option other than ruling that City's rates were out of compliance with the proportionality requirement of Proposition 218.

In essence, the court clarified that the conservation goals of Article 10, Section 2 need to be harmonized with the cost of service and proportionality requirements of Article 13D, Section 6. Agencies cannot adopt tiered rates solely based on policy preferences (such as to promote conservation, instead their rates must reasonably reflect the cost of service to each rate tier.

Some key legal opinions from other appellate court decisions include:

City of Palmdale v. Palmdale Water District (2011)

- Court recognized that Article 10, Section 2 of the California Constitution may be harmonized with Article 13D, provided reasonable justification can demonstrate rate compliance with the substantive provisions of Proposition 218.
- Established that compliance with the substantive provisions of Proposition 218, particularly regarding the proportionality requirement, is subject to independent validation by the court.
- Highlighted the importance of establishing a substantive administrative record justifying that rates fully comply with the substantive provisions of Proposition 218.

Griffith v. Pajaro Valley Water Management Agency (2013)

- Confirmed that water service includes not just supplying water to meet customer needs in a given year, but also includes planning and funding efforts to ensure adequacy of an ongoing long-term supply.
- Indicated that property-related fees such as water rates do need not be calculated on a parcel by parcel basis to meet the cost of service and proportionality requirements of Prop. 218.
- Recognized that cost “apportionment is not a determination that lends itself to precise calculation.”

Moore v. City of Lemon Grove (2015)

- Concluded that the City could transfer funds from its wastewater utility to its General Fund based on reasonable estimates of costs incurred by the General Fund on behalf of the wastewater utility.
- Recognized that fees are not easily correlated to a specific ascertainable cost.
- Deemed that apportionment in accordance with an agency’s best cost estimates is sufficient.

Morgan v. Imperial Irrigation District (2014)

- Clarified that Proposition 218 does not require a separate protest process for separate rate classes or separate rate areas, but instead allows a single Proposition 218 process for all customer classes and zones.
- Noted that ratemaking by customer class is consistent with the proportionality requirement of Proposition 218.
- Recognized that the data used in the rate-setting process does not need to be perfect.

Ultimately, BWA believes that courts have recognized that there is no single correct way to apportion and recover costs, and that agencies may legitimately use a wide range of rate structures provided the rates can be shown to reasonably reflect cost of service.

5 WATER FINANCES & CASH FLOW PROJECTIONS

5.1 Financial Overview

The City's water utility is a financially self-supporting enterprise that relies primarily on revenues from water rates to fund the costs of providing service. Water rate revenues typically account for over 98% of total annual revenues, with the remaining revenues coming from interest earnings, late fees, installation and meter charges from new development, and other miscellaneous revenues. As such, water rates must be set at levels adequate to fund the costs of operating and maintaining the water system, pay for wholesale water supplied by the SFPUC, and fund necessary capital improvements to keep the water system in good operating condition.

Bartle Wells Associates conducted an independent evaluation of water enterprise finances. Key observations include:

- The City's water utility has been operating in deficit mode and will continue to draw down fund reserves until rates are raised to adequate levels to support financial stability. Fund reserves have been drawn down below prudent levels and, absent an increase in water rates, capital projects programmed for the 2017/18 fiscal year will need to be deferred.
- The City relies on imported water from the SFPUC for 100% of its water supply. Wholesale water rates have more than doubled since 2010 and quadrupled since 2005. The SFPUC is projecting to increase rates by an additional 30% over the next 3 years.
- Despite the substantial increases in SFPUC wholesale water rate increases, the City has not increased its water rates in 4 years.
- Water sales have decreased by more than 25% from the benchmark calendar year 2013 through fiscal year 2015/16 as customers have responded to the drought by substantially reducing water consumption.
- As available revenues for capital projects have dwindled, the City has substantially curtailed the water utility's capital improvement program in recent years and deferred a number of projects due to revenue shortfalls.
- Large increases in the wholesale water rates coupled with no rate increases and a substantial decline in water sales due to drought have led to annual budget deficits. The water utility is currently operating in deficit mode despite significantly reducing the water utility's ongoing capital improvement program.
- Substantial rate increases are needed to restore financial stability, fund the escalating costs of wholesale water supply, and restore capital improvement funding to ensure the water system continues to provide safe and reliable water service.

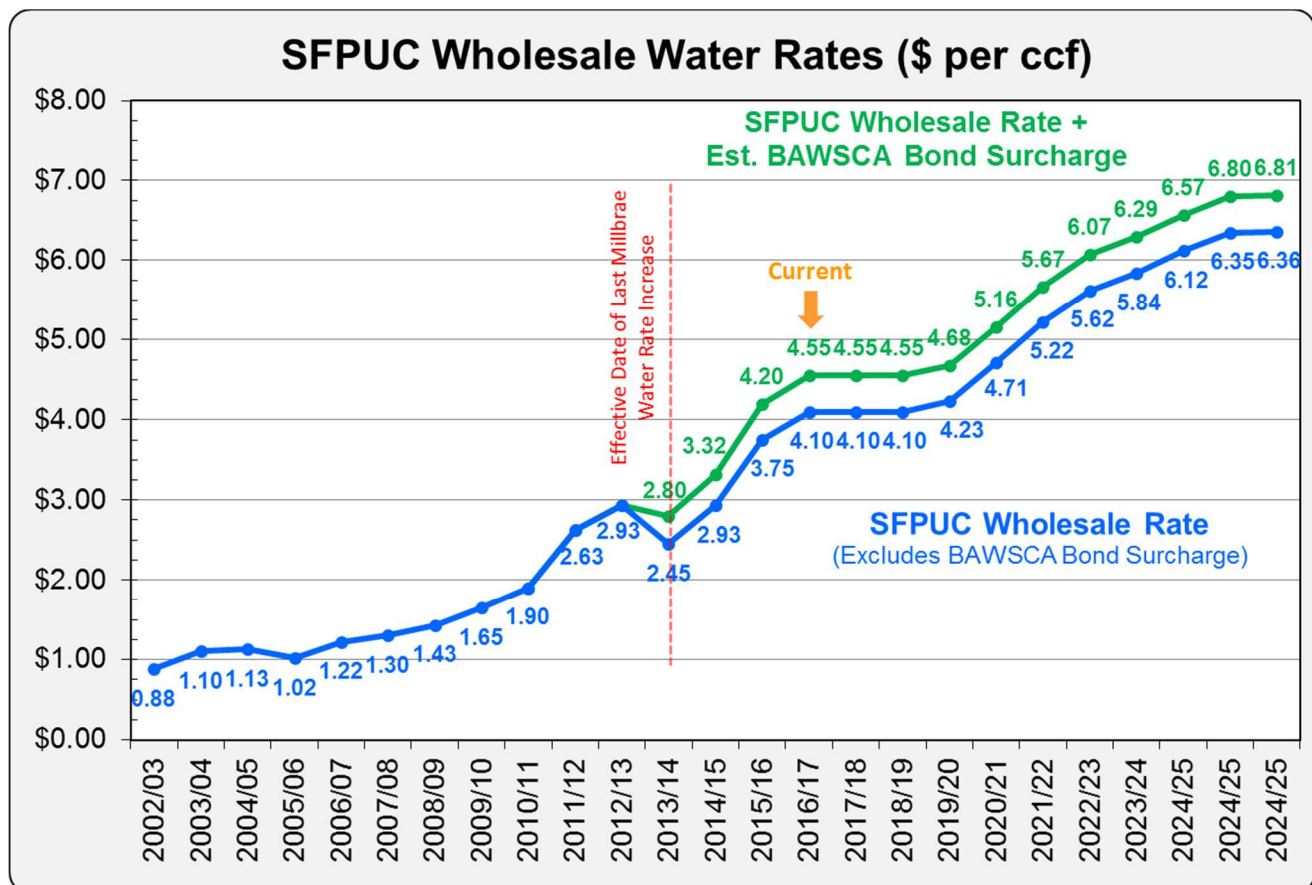
5.2 Financial Challenges

The City's water utility is facing a number of substantial financial challenges that will drive the need for significant rate increases in upcoming years. These financial challenges include:

5.2.1 SFPUC Wholesale Water Rate Increases

As noted, the City relies on imported water from the SFPUC for 100% of the community's water supply. The SFPUC is in the process of completing a \$4.8 billion program of seismic upgrades and reliability enhancements to the aging Hetch Hetchy regional water system that delivers water to San Francisco and over 25 regional water agencies including Millbrae. To help fund these upgrades, the SFPUC has more than doubled its water rates since 2010 and more than quadrupled its wholesale water rates since 2005. The SFPUC is projecting to increase wholesale rates by an additional 27% over the next 5 years. Figure 6 shows historical and projected SFPUC wholesale water rates. The figure breaks out a separate BAWSCA bond surcharge that is a component of the wholesale cost of water and is collected with the SFPUC's water bills. The BAWSCA bond surcharge represent the City's share of debt repayment for bonds issued by BAWSCA to more-than-offset a component of SFPUC's prior water rates and result in a lower overall cost of water supply.

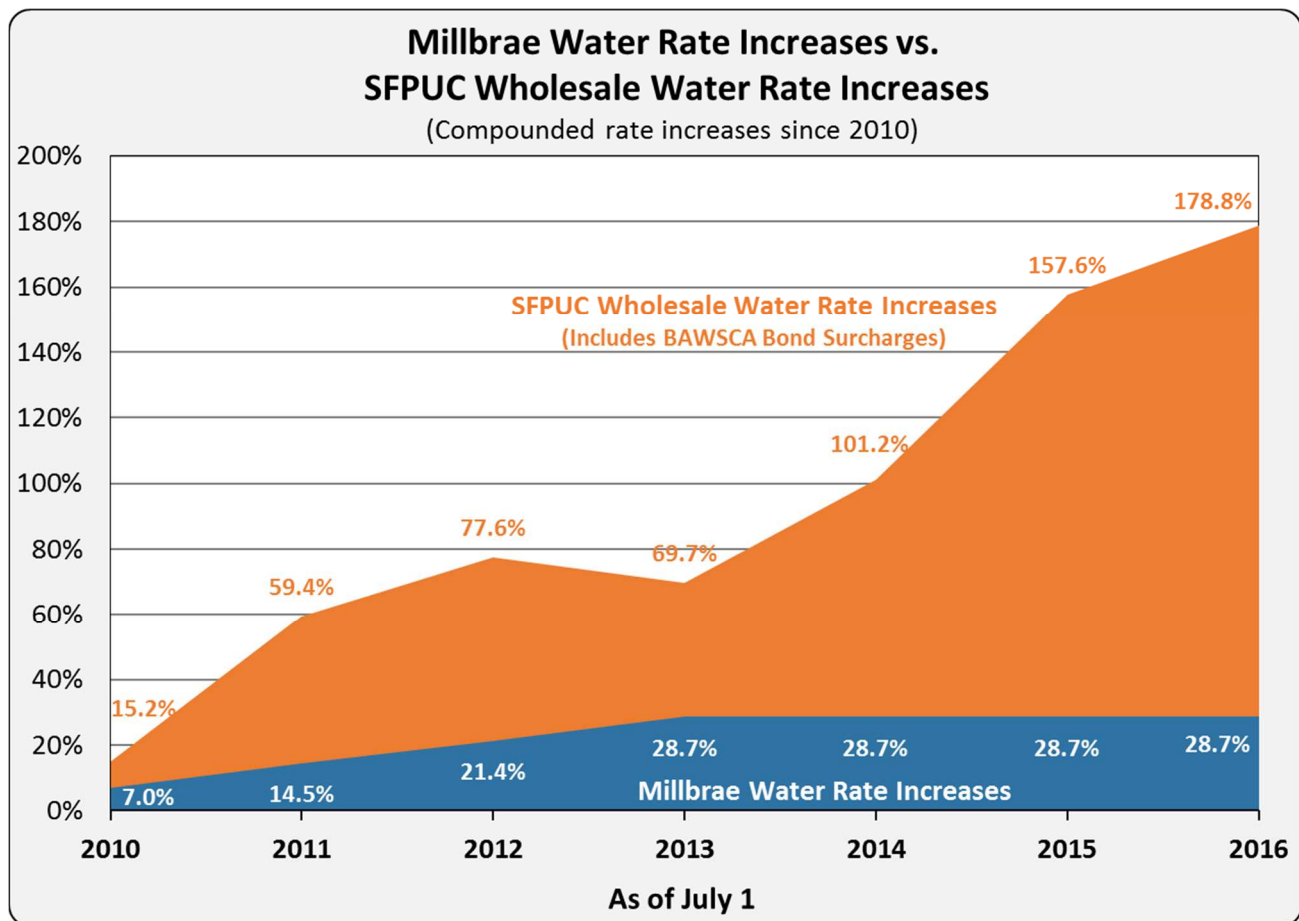
Figure 6: Historical & Projected SFPUC Wholesale Water Rates



Since the City's last water rate increase effective July 1, 2013, the cost per unit of wholesale water has increased from \$2.80 per ccf to approximately \$4.56 ccf, representing an increase of \$1.75 per ccf with no corresponding City rate increase.

The following chart compares the City's compounded water rate increases since 2010 vs. compounded wholesale water rate increases from SFPUC (including the BAWSCA bond surcharge). Since 2010, wholesale water rates have increased almost 178.8% while the City's water rate have only increased by 28.7% over the same period.

Figure 7: Historical & Projected SFPUC Wholesale Water Rates



5.2.2 Capital Improvement Plan

Many of the City's water system distribution pipelines are over 70 years old and are nearing the end of their useful lives and in need of replacement. Additionally, the City has inadequate water storage capacity and needs to rebuild three aging water tanks and bring them up to modern seismic standards. The City had previously been proactively rehabilitating, repairing, and replacing aging infrastructure, but has significantly reduced its capital program in recent years due to annual revenue shortfalls. Additional revenues are needed to restore a prudent minimal level of annual funding for capital improvements to repair and replace aging water distribution pipelines. Ongoing investment in the City's water

infrastructure is needed to address existing system deficiencies and support the safe and reliable provision of water service.

Unfortunately, the City's rates do not current generate sufficient funding for capital improvements. In fact, the City is operating at a budget deficit even with an almost complete curtailment of capital funding. In order to mitigate the need for substantial immediate rate increases in order to immediately restore funding for capital needs, the City instead can take a number of measures that can allow for a multi-year phase in of rate increases, including:

- Defer high-priority capital needs until rates are phased in to adequate levels. This may not be desirable as the City has already deferred a number of improvements in recent years and would continue to fall further behind for additional years.
- Borrow funds to help pay for high-priority, near-term capital needs in order to reduce the immediate funding burden and spread repayment over a number of future years. Due to the relatively low level of financing needs, the City could potentially issue debt or make an interfund loan to help finance projects.
- Combination of partial project deferral and use of debt financing.

5.2.3 Ongoing Cost Inflation

The City faces ongoing operating cost inflation due to annual increases in a range of expenses including staffing, utilities, insurance, supplies, etc. Small annual rate increases are generally needed to keep revenues aligned with cost inflation and prevent rates from falling behind the cost of providing service.

5.2.4 Decline in Water Sales

The City's water service charge revenues have been negatively impacted by the large decline in water sales in recent years. A portion of these "revenue losses" have been offset by a corresponding decrease in wholesale water purchases. However, the City's Water Quantity Charges recover costs not just for wholesale water purchases, but also help fund other water enterprise expenses, many of which are fixed costs that do not vary with changes in water use. Rate increases needed to compensate for reduced water sales put upward pressure on rates but not necessarily water bills, since customers who cut back water use purchase fewer units of water.

5.3 Water Enterprise Financial Projections

BWA developed long-term cash flow projections to determine annual water utility revenue requirements and project water rate increases. The financial projections incorporate the latest information available as well as a number of reasonable and slightly conservative assumptions. Key assumptions include:

WATER SALES & PURCHASES

- Future water sales are estimated based on actual sales from 2015/16 and include a small assumed rebound in water use of 5% in the current fiscal year and an additional 3% increase in demand next fiscal year, with future water demand after 2017/18 remaining unchanged.
- The volume of future SFPUC water purchases is estimated based on the volume of water sales plus 10% to account for unaccounted water and system losses. Some of this system loss may be due to a) water use for system flushing and maintenance, and b) actual water loss via leaks, while a significant portion may be simply due to c) a difference in the accuracy of metering from the City's five SFPUC supply turnouts to the City's over 6,580 metered connections. As meters age, they tend to get less accurate and undercount the volume of water.
- Future SFPUC wholesale water rates are based on the most-recent SFPUC rate projections. SFPUC rates are projected to increase by an additional 27% over the next five years.

REVENUE PROJECTIONS

- Rate adjustments are projected to go into effect on July 1 of each year starting July 1, 2017.
- Water sales revenues are projected based the projected volume of water sales multiplied by the projected water quantity charges in effect each year.
- Interest earnings are projected based on the beginning fund balance projected each year multiplied by projected interest rates that gradually increase from 0.5% to 1.0% in 2019/20 and beyond.
- Other revenues are projected at roughly \$70,000 per year based on review of historical revenues from recent years.

EXPENSE PROJECTIONS

- City operating and maintenance expenses are based on actual results from 2015/16 escalated by 5% in 2016/17 and 4% in subsequent future years.
- SFPUC Wholesale Water Purchases are estimated based on projected SFPUC wholesale purchases multiplied by projected wholesale rates.
- BAWSCA Bond Surcharges are based on the most recent BAWSCA estimates for 2016/17 and include a true-up for the prior fiscal year. Future BAWSCA surcharges may vary depending on the City's share of total water use from all BAWSCA agencies.

- Capital improvement funding over the next 5 years includes:
 - Approximately \$6.7 million for design, reconstruction and upgrades of two aging water tanks. The projections assume the City will issue \$6.25 million of debt to finance the construction costs of these facilities within the next 5 years. Reconstruction of a third tank is anticipated after the next 5 years.
 - A gradual phase-in of annual funding for pipeline and infrastructure replacements from \$500,000 in 2016/17 to \$3.0 million in 2021/22. The projections assume these projects are funded on a cash, pay-as-you-go basis corresponding with a phase-in of rate increases over the next 5 years.
 - \$300,000 per year of additional funding for annual infrastructure repairs and replacements.

The table on the following page shows 10-year cash flow projections incorporating the assumptions described above. The rate projections shown on the table are designed to fund the City's cost of providing service while supporting balanced budgets and maintaining prudent minimal levels of fund reserves.

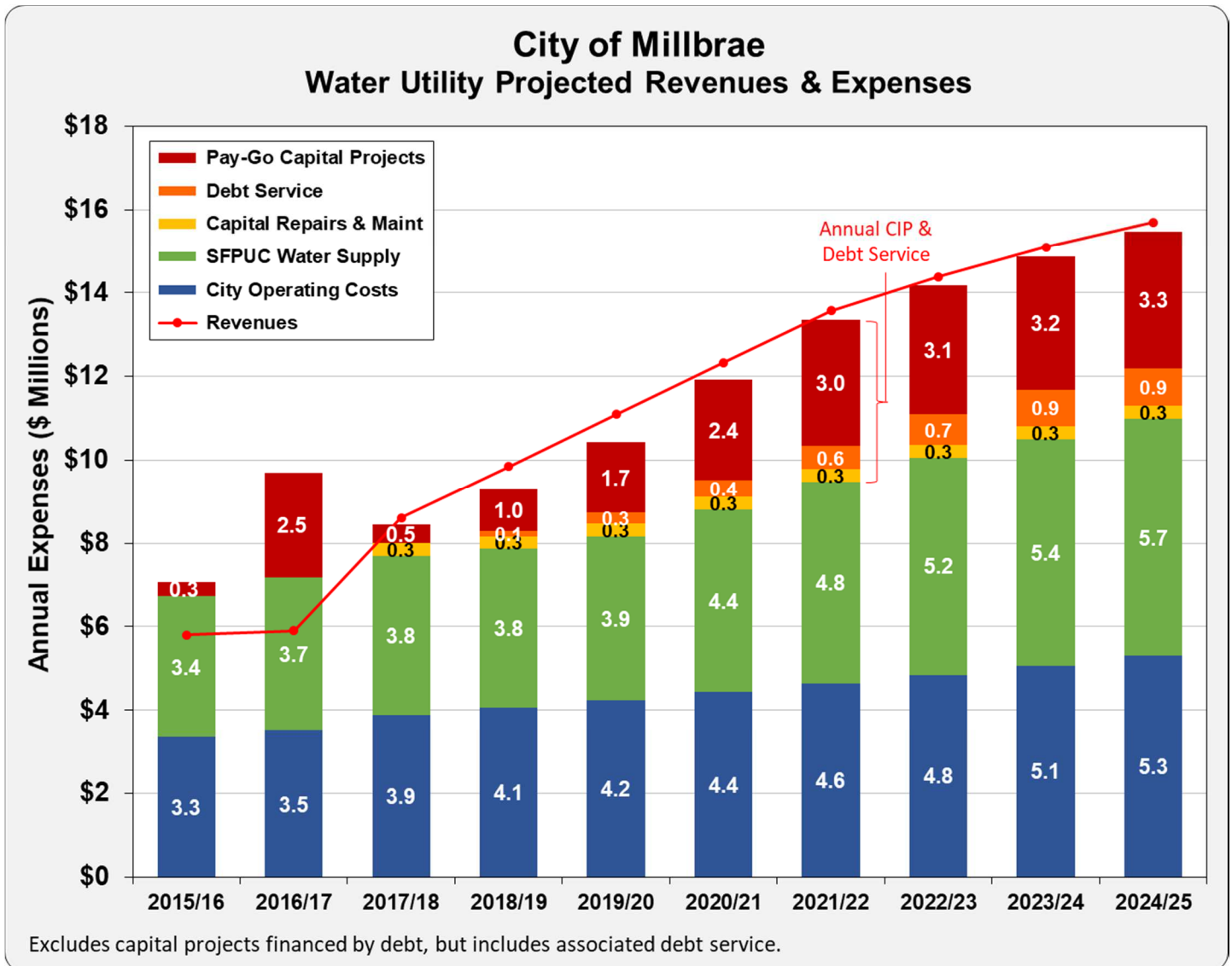
City of Millbrae Water Cash Flow Projections

	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27
Effective Date of Rate Increase			Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1	Jul-1
Monthly Meter Charge per 3/4"	\$15.00	\$15.00	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00	\$31.80	\$33.39	\$34.73	\$35.77	\$36.84
Water Quantity Charge (\$/ccf)	\$5.45	\$5.45	\$8.00	\$9.20	\$10.40	\$11.60	\$12.80	\$13.57	\$14.25	\$14.82	\$15.26	\$15.72
Monthly Bill: 3/4" meter, 6 ccf use	\$47.70	\$47.70	\$68.00	\$77.70	\$87.40	\$97.10	\$106.80	\$113.22	\$118.89	\$123.65	\$127.33	\$131.16
Accounts (3/4" Meter Equivalents)	7,533	7,337	7,337	7,337	7,337	7,337	7,337	7,337	7,337	7,337	7,337	7,337
Change in Water Sales %		5.0%	3.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual Water Sales (ccf)	780,026	819,000	843,600	843,600	843,600	843,600	843,600	843,600	843,600	843,600	843,600	843,600
Jul-Dec % of Use	55%	56%	57%	58%	58%	58%	58%	58%	58%	58%	58%	58%
SFPUC Water Purchases (ccf) +10%	899,785	900,900	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000	928,000
SFPUC Wholesale Rate (per ccf)	\$3.75	\$4.10	4.10	\$4.10	\$4.23	\$4.71	\$5.22	\$5.62	\$5.84	\$6.12	\$6.35	\$6.36
Interest Earnings Rate		0.5%	0.5%	0.75%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
City Cost Escalation		5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%
Debt Service per \$1 Million Proceeds			\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000	\$90,000
Beginning Available Fund Balances	\$6,500,000	\$5,200,000	\$1,418,000	\$1,586,000	\$2,133,000	\$2,784,000	\$3,190,000	\$3,412,000	\$3,607,000	\$3,831,000	\$4,060,000	\$4,188,000
REVENUES												
Water Meter Charges	1,356,000	1,347,000	1,787,000	2,007,000	2,227,000	2,447,000	2,667,000	2,826,000	2,966,000	3,084,000	3,175,000	3,270,000
Water Sales	4,328,000	4,464,000	6,749,000	7,761,000	8,773,000	9,786,000	10,798,000	11,448,000	12,021,000	12,502,000	12,873,000	13,261,000
Interest Earnings	20,000	26,000	7,000	12,000	21,000	28,000	32,000	34,000	36,000	38,000	41,000	42,000
Other Revenues	95,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000	70,000
Total Revenues	5,799,000	5,907,000	8,613,000	9,850,000	11,091,000	12,331,000	13,567,000	14,378,000	15,093,000	15,694,000	16,159,000	16,643,000
Debt Proceeds for Water Tanks				3,000,000		3,250,000		3,500,000				
EXPENSES												
<u>Operating & Maintenance</u>												
					2,275,000	2,389,000	2,508,000	2,633,000	2,765,000	2,903,000	3,048,000	3,200,000
Additional Staffing Needs	-	-	250,000	263,000	276,000	290,000	305,000	320,000	336,000	353,000	371,000	390,000
SFPUC Water Purchases	3,403,000	3,694,000	3,805,000	3,805,000	3,925,000	4,371,000	4,844,000	5,215,000	5,420,000	5,679,000	5,893,000	5,902,000
SFPUC Meter Charges	122,000	122,000	124,000	126,000	129,000	132,000	135,000	138,000	141,000	144,000	147,000	150,000
BAWSCA Bond Surcharge	347,000	358,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000	350,000
Overhead Alloc & Gen Liability	392,000	412,000	433,000	455,000	478,000	502,000	527,000	553,000	581,000	610,000	641,000	673,000
Supplies & Services/Other	607,000	637,000	669,000	702,000	737,000	774,000	813,000	854,000	897,000	942,000	989,000	1,038,000
Subtotal	6,743,000	7,189,000	7,695,000	7,868,000	8,170,000	8,808,000	9,482,000	10,063,000	10,490,000	10,981,000	11,439,000	11,703,000
Debt Service	0	0	0	135,000	270,000	417,000	563,000	721,000	878,000	878,000	878,000	878,000
<u>Capital Improvements</u>												
Water Tank Upgrades	0	0	450,000	3,000,000	0	3,250,000	0	3,500,000	0	0	0	0
Pipeline & Other Improvements	329,000	2,500,000	0	1,000,000	1,700,000	2,400,000	3,000,000	3,090,000	3,183,000	3,278,000	3,376,000	3,477,000
Capital Repairs & Maintenance	0	0	300,000	300,000	300,000	300,000	300,000	309,000	318,000	328,000	338,000	348,000
Subtotal	329,000	2,500,000	750,000	4,300,000	2,000,000	5,950,000	3,300,000	6,899,000	3,501,000	3,606,000	3,714,000	3,825,000
Total Expenses	7,072,000	9,689,000	8,445,000	12,303,000	10,440,000	15,175,000	13,345,000	17,683,000	14,869,000	15,465,000	16,031,000	16,406,000
Revenues Less Expenses	(1,273,000)	(3,782,000)	168,000	547,000	651,000	406,000	222,000	195,000	224,000	229,000	128,000	237,000
Ending Available Fund Balances	5,227,000	1,418,000	1,586,000	2,133,000	2,784,000	3,190,000	3,412,000	3,607,000	3,831,000	4,060,000	4,188,000	4,425,000
Fund Rsrv Target (25%O&M+\$1M CIP)	2,690,000	2,800,000	2,920,000	2,970,000	3,040,000	3,200,000	3,370,000	3,520,000	3,620,000	3,750,000	3,860,000	3,930,000
Debt Service Coverage (Min>1.20)		-	-	14.68	10.82	8.45	7.26	5.98	5.24	5.37	5.38	5.63

Table 8. Water Cash Flow Projections

Figure 8 shows a 10-year projection of expenses broken down by key categories and projected annual revenues based on the cash flow projections.

Figure 8: Projected Revenues & Expenses



5.4 Projected Rate Increases

Table 9 shows projected rate increases needed to meet the water utility's annual revenue requirements. The proposed rate increases are phased in as gradually as possible, but include a larger initial increase to help stabilize finances and take a larger step toward catching up with prior SFPUC wholesale rate increases.

Table 9. Summary of Proposed Rate Adjustments

Effective Date	Current	Proposed Rates Effective on or After				
	Rates (Jul-1, 2013)	July 1 2017	July 1 2018	July 1 2019	July 1 2020	July-1 2021
FIXED MONTHLY SERVICE CHARGE						
Meter Size						
Base 3/4" Meter	\$15.00	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00
% Increase		33.3%	12.5%	11.1%	10.0%	9.1%
QUANTITY CHARGE PER CCF						
All Water Use	\$5.45	\$8.00	\$9.20	\$10.40	\$11.60	\$12.80
% Increase		46.8%	15.0%	13.0%	11.5%	10.3%

Due to minor modifications to the rate structure, actual impacts to customers' monthly water bills will vary based on each customer's level of consumption. Note that water consumption typically varies due to seasonal variations in weather and/or other factors. Hence a single customer could face a range of impacts throughout the year depending on their variations in monthly water use.

In future years, the City can re-evaluate its future rate and revenue requirements based on future updates of long-term financial projections. The City always has the flexibility to implement rates that are lower than those adopted pursuant to the Proposition 218 process. However, future rates cannot exceed levels adopted via the Proposition 218 process without going through the Proposition 218 process for any additional increases. Rates adopted pursuant to Proposition 218 process are essentially future rate caps.

As part of the rate study process, BWA also evaluated annual revenue requirements and rates under a number of alternative financial scenarios including a scenario with no capital funding other than a minimal \$300,000 per year for annual repairs. This scenario excluded funding for high-priority water tank upgrades/replacements and pipeline rehabilitation and replacement. The analysis indicated that even without any funding for high-priority capital improvements, significant rate increases would still be needed to restore financial stability. Overall, about half of the proposed rate increases are needed to restore financial stability and fund projected operating costs, while the other half of increases are needed to phase-in funding for capital improvement needs of the City's aging water system.

6 WATER RATE DESIGN

6.1 Rate Structure Modifications

The City's current water rates recover costs from customers in a generally fair and equitable manner and do not require any major changes in rate structure. As such, the proposed rates incorporate only minor modifications to the City's water rate structure as summarized as follows.

- **Small Reduction the Share of Revenue Recovery from Fixed Meter Charges** – Under the proposed rates, the share of revenues recovered from Fixed Meter Charges gradually decreases from a current level of roughly 23% to approximately 20% of total rate revenues over the next five years. Corresponding, the share of revenue recovery from usage-based Water Quantity Charges increases from about 77% to 80% of total rate revenues. The small increase in usage-based cost recovery is due to a) the substantial increases in wholesale water rates since the City's last water rate increase in 2013, b) additional projected wholesale rate increases, and c) updated cost-recovery allocations between fixed and usage-based charges. Although fairly minimal, the reduction in the share of fixed rate revenue recovery will benefit low water users as it results in less increases to the City's fixed meter charges than if the City had simply adopted across-the-board rate increases.
- **Minor Re-Alignment of Fixed Meter Charges Based on Meter Capacity** – The proposed rates include a minor re-alignment of Fixed Meter Charges for each meter size. This realignment is based on American Water Works Association meter capacity estimates.
- **Maintain Uniform Water Quantity Charge for All Water Use** – No changes are recommended to the City's uniform water quantity charge rate structure. During the rate study process, the City evaluated and rejected a potential transition to a system of tiered water rates for single family residential customers at this time. The City achieved substantial cutbacks in water use with its uniform rate structure, which as noted earlier, is a type of conservation-oriented rate structure.

6.2 Rate Derivation

The California Constitution does not give agencies leeway to arbitrarily set rates purely based on policy preferences. Instead, it provides agencies with flexibility to implement rates within a framework that does not exceed the costs of service attributable to each parcel or customer.

In reality, many costs of providing service do not exclusively tie in to specific components of an agency's rate structure; some costs can be attributed to different components of an agency's rate structure based on a range of reasonable approaches. For example, costs for salaries, debt service, and capital improvements can reasonably be treated as a) fixed annual costs that should be recovered from fixed charges, b) costs related to providing water supply and system capacity to meet customer demand that therefore should be recovered from water quantity charges based on each customer's actual water use, or c) costs that can be recovered by both fixed and variable rates, a middle-road approach.

Ultimately, there is no single correct way to allocate or attribute costs. Hence, five similar agencies may have five different rate structures provided each agency can establish a reasonable cost basis for their own particular rate structure within the parameters of meeting the various requirements of the California Constitution.

While there is no single correct approach for cost attribution and rate-setting, BWA believes that costs should be allocated within a reasonable range that reflects both a) underlying cost causation, to the extent such causation can reasonably be determined or estimated, and b) the policy preferences of the agency within the parameters of having a reasonable cost basis.

The following tables detail the derivation of water rates for the final year of the planned 5-year increase. Rates in intervening years are phased in from current levels to the levels calculated for year 5, with a larger initial rate increase required to help restore financial stability and eliminate ongoing budget deficits. The basic approach used to calculate the proposed rates is as follows:

- 1) Allocate projected expenses for recovery from the City's fixed and variable (usage-based) rate components. The analysis uses fiscal year 2021/22 as a basis for the cost allocation as this is the final year of the proposed rate increases and reflects target funding levels for the water enterprise that are being phased in over the next 5 years.
- 2) Divide costs allocated for fixed rate recovery by the total number of 3/4-inch meter equivalents – with larger meters converted into 3/4-inch meter equivalents based on meter capacity – to determine a cost basis for the fixed service charge for a 3/4-inch meter. Charges for larger meters are calculated based on the capacity of each meter size in relation to that of the 3/4-inch meter.
- 3) Divide costs allocated for variable, usage-based, cost recovery by the projected volume of water sales in 2021/22 to determine the maximum quantity charge per unit (ccf) of water use.

Table 10 allocates costs for recovery from fixed and variable rates based on projected expenses for 2021/22 (from the 10-year financial projections shown on Table 8), adjusted to account for non-rate revenues and a small amount of contribution toward maintaining adequate fund reserves. Costs for water supply are allocated 100% for recovery from variable, usage-based charges. Costs for other operating expenses and capital improvements are allocated to be recovered 33% from fixed charges and 67% from volumetric charges. This level of revenue recovery is within a reasonable range that reflects that a) a substantial portion of costs are recovered based on metered water use, and b) a smaller but significant portion of costs are fixed costs are incurred regardless of water consumption and are recovered from fixed charges based on the level of water demand and system capacity needs for serving each meter size. Overall, fixed rates are allocated to recover 19.7% of total water rate revenues and variable quantity charges are allocated to recover 80.3% of rate revenues.

Table 10. Fixed & Variable Revenue Recovery for Fiscal Year 2021/22

	Projected 2021/22	Cost Recovery %		Cost Recovery \$	
		Fixed	Variable	Fixed	Variable
EXPENSES					
Operating & Maintenance					
Salaries & Benefits	\$2,813,000	33%	67%	\$928,290	\$1,884,710
SFPUC Water Purchases	4,844,000	0%	100%	0	4,844,000
SFPUC Meter Charges	135,000	0%	100%	0	135,000
BAWSCA Bond Surcharge	350,000	0%	100%	0	350,000
Overhead Alloc & Gen Liability	527,000	33%	67%	173,910	353,090
Supplies & Services/Other	813,000	33%	67%	268,290	544,710
Subtotal	9,482,000	14%	86%	1,370,490	8,111,510
Debt Service, Projected	563,000	33%	67%	185,790	377,210
Annual Capital Funding Target					
Pipeline & Other Improvements	3,000,000	33%	67%	990,000	2,010,000
Capital Repairs & Maintenance	300,000	33%	67%	99,000	201,000
Subtotal	3,300,000	33%	67%	1,089,000	2,211,000
Total Expenses	13,345,000	19.8%	80.2%	2,645,280	10,699,720
ADJUSTMENTS					
Interest Earnings	(32,000)	33%	67%	(10,560)	(21,440)
Est Private Fire Service Charges	(26,000)	100%	0%	(26,000)	0
Other Revenues	(70,000)	55%	45%	(38,500)	(31,500)
Contribution to Fund Reserves	222,000	33%	67%	73,260	148,740
Subtotal	94,000	-2%	102%	(1,800)	95,800
Net Revenue Requirement	13,439,000	19.7%	80.3%	2,643,480	10,795,520

Table 11 shows current meter charge meter ratios and recommended adjusted ratios. The recommended ratios are based on meter capacity estimates developed by the American Water Works Association with ratios for 1-inch and larger meters based on 75% of the safe operating maximum capacity of each meter. This results in a decrease in the meter ratio for 1-inch meters, and small to moderate increases to the meter ratios for larger meter sizes.

Table 11. Meter Equivalents

Meter Size	Number of Accounts	Current Fixed Meter Charges	Current Ratio to 3/4" Meter	Adjusted Ratio to 3/4" Meter*	Percentage Difference
3/4"	5,904	\$15.00	1.00	1.00	0%
1"	281	22.30	1.49	1.25	-16%
1-1/2"	155	36.60	2.44	2.50	2%
2"	103	59.50	3.97	4.00	1%
3"	6	111.70	7.45	7.50	1%
4"	15	163.30	10.89	12.50	15%
6"	2	296.80	19.79	25.00	26%
8"	0	525.60	35.04	40.00	14%
10"	0	842.10	56.14	57.50	2%

* Meter ratios for 1" and larger meters are based on 75% of American Water Works Association safe operating maximum meter capacity estimates.

Table 12 calculates the total number of 3/4-inch meter equivalents based on the number of accounts at each meter size multiplied by the proposed meter charge ratio for each meter size.

Table 12. Meter Equivalents for Fixed Revenue Recovery

Meter Size	Total Meters	Meter Charge Ratio	3/4" Meter Equivalents
3/4"	5,904	1.00	5,904
1"	281	1.25	351
1-1/2"	155	2.50	388
2"	103	4.00	412
3"	6	7.50	45
4"	15	12.50	188
6"	2	25.00	50
8"	-	40.00	-
Total	6,466		7,337

Excludes fire service and temporary connections.

Table 13 derives a fixed charge per 3/4-inch meter equivalent by dividing the annual revenue requirement allocated for recovery from fixed meter charges in 2021/22 (shown on Table 10) by the total number of 3/4-inch meter equivalents (calculated on Table 12), resulting in a fixed monthly charge of \$30.00 per 3/4-inch meter equivalent.

Table 13. Fixed Meter Charge Derivation

Target Annualized Revenue Requirement 2021/22	\$13,439,000
Fixed Rate Revenue Recovery %	19.67%
Fixed Rate Revenue Recovery \$	\$2,643,480
3/4" Meter Equivalents	7,337
Charge per 3/4" Meter Equivalent	
Annual Charge	\$360.29
Charge per Meter Equivalent	\$30.02
Rounded	\$30.00

Table 14 derives a water quantity charge per unit (ccf) by dividing the annual revenue requirement allocated for usage-based revenue recovery from the City's water quantity charges in 2021/22 (shown on Table 10) by the projected volume of water sales, resulting in a charge of \$12.80 per unit (ccf).

Table 14. Water Quantity Charge Derivation

Target Annualized Rate Revenue Requirement 2021/22	\$13,439,000
Variable Rate Revenue Recovery %	80.3%
Variable Rate Revenue Recovery \$	\$10,795,520
Projected Water Sales (ccf)	843,600
Water Quantity Charge per ccf	\$12.797
Rounded	\$12.80

7 PROPOSED RATES & IMPACTS

7.1 Proposed Water Rates

The following table shows a 5-year schedule of proposed water rates incorporating a) the overall level of required rate increases to fund the water utility's costs of providing service, b) the proposed minor adjustments or modifications to the water rate structure, and c) the revenue recovery allocations that reasonably and fairly apportion costs to each component of the City's rate structure. Rate increases and some rate structure modifications are phased in as gradually as possible to help minimize the annual impact on customers. However, a larger increase is needed the first year to help eliminate annual budget deficits, restore financial stability, and account for large wholesale rate increases that have occurred since the City last adjusted its water rates. Proposed water rates are scheduled to become effective on July 1 at the beginning of each fiscal year.

Table 15. Proposed Water Rates

Proposed Water Rates						
Current Rates		Proposed Rates Effective on or After				
	<i>Effective since</i>	July 1	July 1	July 1	July 1	July-1
Effective Date	<i>July 1, 2013</i>	2017	2018	2019	2020	2021
FIXED MONTHLY SERVICE CHARGE						
<i>Fixed monthly charge based on meter size</i>						
Meter Size						
3/4-inch	\$15.00	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00
1-inch	22.30	25.00	28.13	31.25	34.38	37.50
1-1/2 inch	36.60	50.00	56.25	62.50	68.75	75.00
2-inch	59.50	80.00	90.00	100.00	110.00	120.00
3-inch	111.70	150.00	168.75	187.50	206.25	225.00
4-inch	163.30	250.00	281.25	312.50	343.75	375.00
6-inch	296.80	500.00	562.50	625.00	687.50	750.00
8-inch	525.60	800.00	900.00	1,000.00	1,100.00	1,200.00
10-inch	842.10	1,150.00	1,293.75	1,437.50	1,581.25	1,725.00
Fire Service Charge						
Per Connection	\$24.40	\$32.53	\$36.60	\$40.67	\$44.74	\$48.81
QUANTITY CHARGE						
<i>Billed per hundred cubic feet (ccf) of metered water use (1 ccf = 748 gallons = 1 unit)</i>						
All Water Use	\$5.45	\$8.00	\$9.20	\$10.40	\$11.60	\$12.80

7.2 Water Rate Impacts

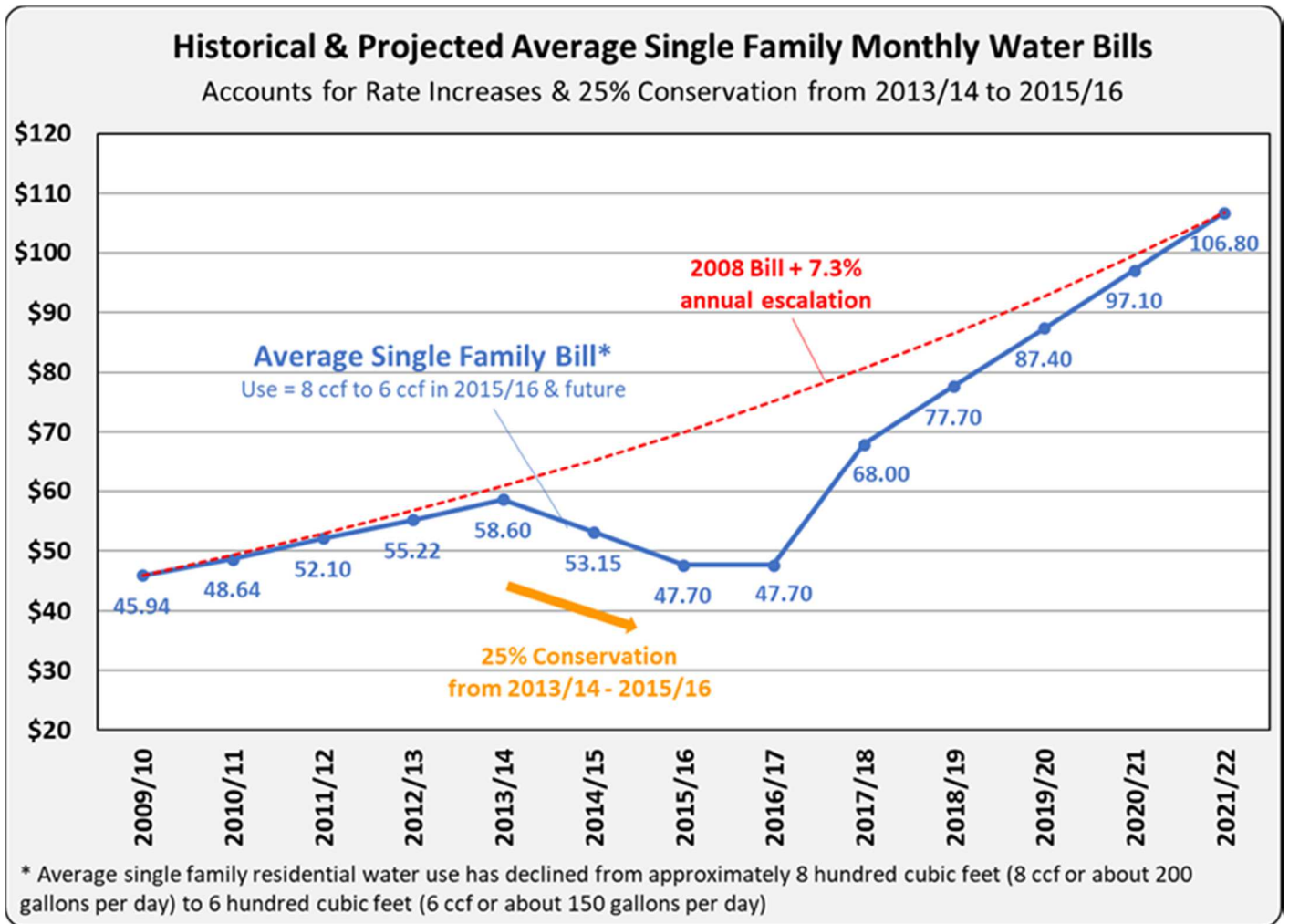
Table 16 shows the monthly impacts of the proposed water rates on a single family residential customer with a 3/4-inch meter at a range of levels of water use. Customers may be able to partially mitigate the impact of rate increases by continuing to reduce water use. Note that water consumption, particularly for single family customers, typically varies from month to month due to seasonal variations in weather and/or other factors. Hence customers could face a range of impacts throughout the year depending on their level of water use in each billing period. The table shows monthly charges and impacts. The City bills customers bi-monthly (once every two months) for water service on a combined water and sewer utility bill.

Table 16. Single Family Residential Bill Impacts

Monthly Use (ccf)	% of Bills at or Below	Current Monthly Charge	Projected Monthly Water Charges					Average Annual Increase %
			July 1 2017	July 1 2018	July 1 2019	July 1 2020	July 1 2021	
	<u>2015/16</u>							
0	1.5%	\$15.00	\$20.00	\$22.50	\$25.00	\$27.50	\$30.00	14.9%
1	6.4%	20.45	28.00	31.70	35.40	39.10	42.80	15.9%
2	15.1%	25.90	36.00	40.90	45.80	50.70	55.60	16.5%
3 Low	28.0%	31.35	44.00	50.10	56.20	62.30	68.40	16.9%
4	42.5%	36.80	52.00	59.30	66.60	73.90	81.20	17.1%
5 Median	55.9%	42.25	60.00	68.50	77.00	85.50	94.00	17.3%
6 Average	66.7%	47.70	68.00	77.70	87.40	97.10	106.80	17.5%
7	75.2%	53.15	76.00	86.90	97.80	108.70	119.60	17.6%
8 Top 20%	81.4%	58.60	84.00	96.10	108.20	120.30	132.40	17.7%
9	86.1%	64.05	92.00	105.30	118.60	131.90	145.20	17.8%
10	89.4%	69.50	100.00	114.50	129.00	143.50	158.00	17.9%
11	92.0%	74.95	108.00	123.70	139.40	155.10	170.80	17.9%
12	93.9%	80.40	116.00	132.90	149.80	166.70	183.60	18.0%
13 Top 5%	95.3%	85.85	124.00	142.10	160.20	178.30	196.40	18.0%
14	96.2%	91.30	132.00	151.30	170.60	189.90	209.20	18.0%
15	96.9%	96.75	140.00	160.50	181.00	201.50	222.00	18.1%
16	97.6%	102.20	148.00	169.70	191.40	213.10	234.80	18.1%
17	98.0%	107.65	156.00	178.90	201.80	224.70	247.60	18.1%
18	98.3%	113.10	164.00	188.10	212.20	236.30	260.40	18.2%
19	98.7%	118.55	172.00	197.30	222.60	247.90	273.20	18.2%
20	98.9%	124.00	180.00	206.50	233.00	259.50	286.00	18.2%
25	99.5%	151.25	220.00	252.50	285.00	317.50	350.00	18.3%
50	99.95%	287.50	420.00	482.50	545.00	607.50	670.00	18.4%

While the proposed rates represent substantial increases over the next 5 years, it is important to put the billing impacts in longer-term perspective. The following chart shows historical and projected monthly charges for a typical single family home. The proposed rates will result in a longer-term average annual bill increase of approximately 7.3% accounting for historical and projected water rates as well as changes in average single family water consumption.

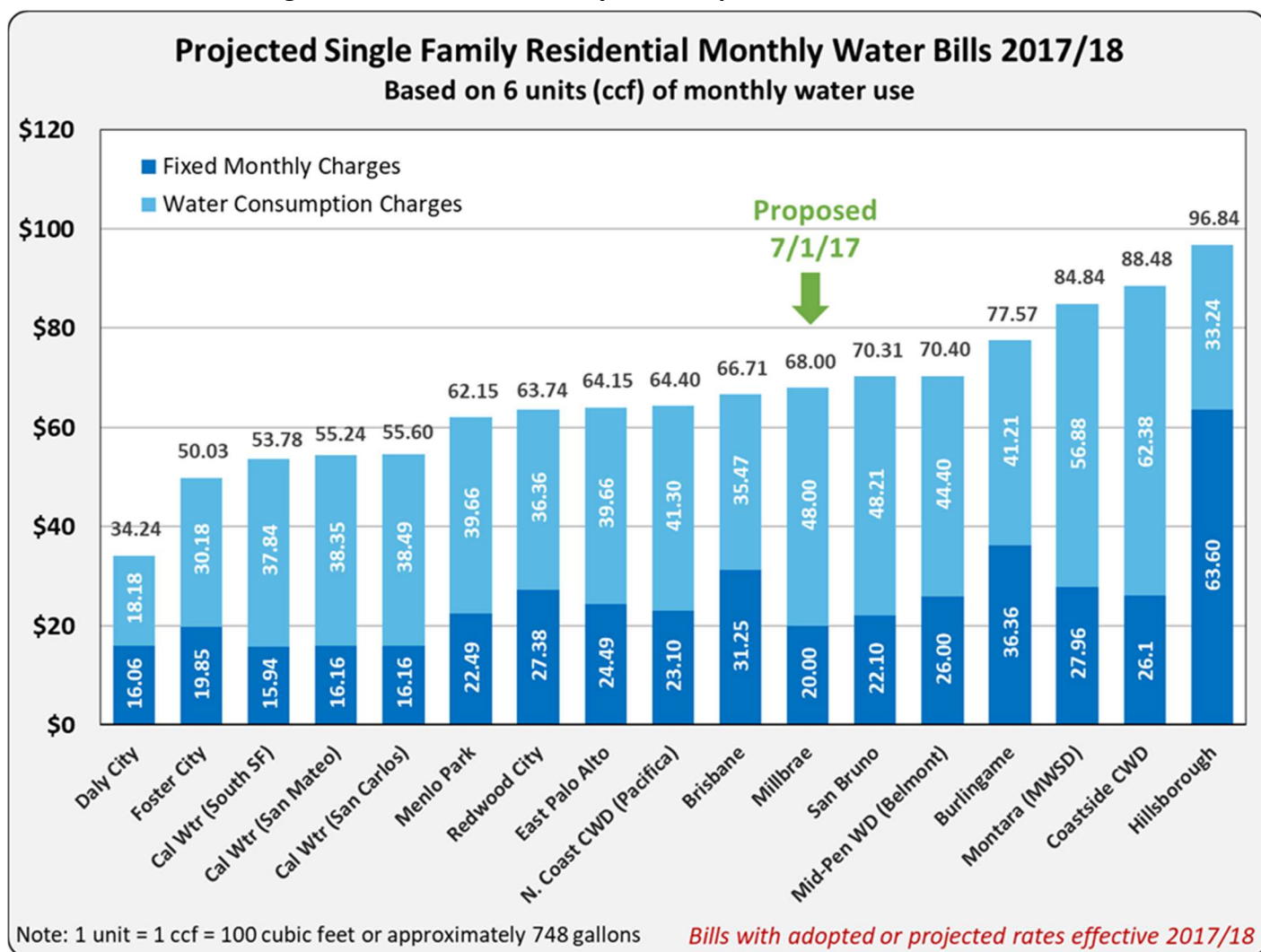
Figure 9: Projected Revenues & Expenses



With the proposed rate increases, the City's water bills for a typical single family home are projected to end up in the upper-middle range compared to other regional agencies, similar to how the City previously compared 5 to 10 years ago. Since 2013, the City's rates have not only fallen behind both the cost of service, they have also fallen behind the rates charged by most other regional agencies.

The table below compares the City's projected monthly charges for fiscal year 2017/18 to the anticipated charges of other agencies. Many other agencies have already adopted water rate increases for upcoming years or are in the process of moving forward with rate increases. As such, this table reflects best estimates of what some other agencies are planning for the upcoming fiscal year. Many regional agencies are facing similar financial challenges to Millbrae, including wholesale water rate increases, substantial decreases in water sales, and the need to increase funding for rehabilitation and replacement of aging water system infrastructure.

Figure 10: Water Rate Survey with Proposed Rates for 2017/18



7.3 Water Rate Pass-Through Provisions

California Government Code Section 53756 (established via AB-3030) became effective on January 1, 2009. As subsequently amended, this section of the Code authorizes public agencies providing water, sewer, and garbage services to adopt automatic pass-through rate adjustments to account for a) cost inflation, and b) increases in wholesale water charges or wastewater treatment charges.

According to the Code, pass-throughs must be adopted via the Proposition 218 process and can be effective for up to five years without additional Proposition 218 authorization. The Proposition 218 Notice informing ratepayers of the proposed pass-through(s) must include a clearly defined formula indicating how any inflationary or wholesale adjustments will be implemented. After adoption of a pass-through formula, agencies do not need to go through the full Proposition 218 process to implement a pass-through. Instead, agencies must send ratepayers an information notice describing the proposed pass-through rate adjustment not less than 30 days before the effective date of the pass-through adjustment. Regardless of the pass-through authorization, rates must continue to comply with the substantive provisions of Proposition 218 including that any pass-through adjustment cannot exceed the cost of providing service.

The proposed rates already account for projected SFPUC wholesale rate increases. However, the pass-through authorization could provide the City with additional protection to account for any unanticipated wholesale rate increases that exceed the levels included in the financial projections. For example, the proposed rates assume that the SFPUC will increase its wholesale water rates (excluding the BAWSCA bond surcharge) on July 1 each year from the current level of \$4.10 per ccf to \$4.23 per ccf in 2019, \$4.71 per ccf in 2020, and \$5.22 per ccf in 2021. The pass-throughs can be structured to account for any additional increases in SFPUC wholesale water above these projected levels. Future pass-throughs can be implemented by increasing the City's proposed Water Quantity Charges by the exact amount of the wholesale water rate increase in cents per ccf in excess of the projected SFPUC wholesale rates. For example, if the SFPUC raises its wholesale water rate to \$5.00 per ccf on July 1, 2020, the City would be authorized to increase its Water Quantity Charges by an additional \$0.29 per ccf on July 1, 2020. Prior to initiating a pass-through for future SFPUC wholesale rates, the City would need to send notification of such increases to all customers at least 30 days prior to implementation.

Appendix A

Proposition 218 Notice of Proposed Rate Increases