



Water Financial Plan & Rate Study

May 26, 2015



BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS



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May 26, 2015

Mid-Peninsula Water District
3 Dairy Lane
Belmont, CA 94002

Attn: Tammy Rudock, General Manager

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 new water rates designed to equitably recover the costs of providing service. The recommended rates are designed to meet the District's operational and capital funding needs, comply with legal requirements, and be fair to all customers.

The proposed water rates incorporate both overall rate increases needed to meet the MPWD's funding needs as well as some modifications to the water rate structure designed to improve rate equity. Rate increases and some rate structure modifications are phased in gradually over five years to minimize the annual impact on District customers. The study also develops Water Shortage Emergency Rates designed to recover the District's cost of service and support financial stability during periods of water shortages and reduced water sales.

We enjoyed working with the District on this assignment and appreciate the cooperation and assistance received from MPWD staff throughout the project. Final recommendations were developed with substantial input from the project team and the Board of Directors. Please contact us anytime if you have questions about the recommendations in this report or other related issues.

Sincerely,

BARTLE WELLS ASSOCIATES

Alex T. Handlers, CIPMA
Principal/Vice-President

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- Appendix A Additional Water Rate Study Tables
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1 BACKGROUND & OBJECTIVES

1.1 Background

The Mid-Peninsula Water District (MPWD or District) provides water service to a population of approximately 27,000 in the City of Belmont and adjacent portions of the City of San Carlos, City of Redwood City, and unincorporated San Mateo County. The District's service area covers approximately 5 square miles. MPWD is located about 30 miles south of San Francisco in San Mateo County. MPWD was formed in 1929 as a County Water District and is governed by a five-member board of directors elected from five geographical divisions.

The District owns and operates a water distribution system that includes 9 pressure zones, 19 pumps, 11 water tanks, 20 water regulating valves, 790 fire hydrants and 94 miles of water mains. The District relies on imported water from the San Francisco Public Utility Commission (SFPUC) for 100% of the community's water supply. MPWD 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 District 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 water system in good operating condition. The District last conducted a water rate study in 2010 which recommended five-years of rate increases with the last increase going into effect on July 1, 2014.

1.2 Rate Study Objectives

In 2014, MPWD retained Bartle Wells Associates (BWA) to update the District's financial plan and 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 substantive cost-of-service requirements of the California Constitution, Article 13D, Section 6 (established by Proposition 218) and the general mandate of Article 10, Section 2 that prohibits the wasteful use of water;
- Support MPWD's long-term operational and financial stability.

This report summarizes key findings and recommendations for water rates over the next five years. Final recommendations were developed with input from the District and its Board of Directors. The full set of tables developing long-term financial projections and rate recommendations is included in the appendix to this report.

2 WATER RATES

2.1 Current & Historical Water Rates

MPWD has provided good financial stewardship by gradually raising rates in each of the past five years to recover the District's cost of providing water service. Table 1 shows a schedule of MPWD water rates since 2010/11.

Table 1. Historical & Current Water Rates

		July 1 2010	July 1 2011	July 1 2012	July 1 2013	July 1 2014
Fixed Monthly Charges						
<i>Billed based on meter size</i>						
<u>Meter</u>	<u>Meter Ratio</u>					
5/8"	1.00	\$13.30	\$14.23	\$15.51	\$16.91	\$18.43
1"	1.50	19.96	21.35	23.27	25.37	27.65
1 1/2"	2.50	33.26	35.58	38.79	42.28	46.08
2"	4.00	53.22	56.93	62.06	67.64	73.73
3"	6.00	79.83	85.40	93.09	101.47	110.59
4"	10.00	133.04	142.33	155.15	169.11	184.31
6"	25.00	332.61	355.83	387.87	422.78	460.79
Water Consumption Charges						
<i>Billed based on monthly metered water use (\$/hcf)*</i>						
<u>Residential Rate Tiers</u>						
Tier 1	0 - 2 units	\$2.40	\$3.25	\$3.53	\$3.85	\$4.20
Tier 2	3 - 10 units	4.60	5.00	5.44	5.93	6.46
Tier 3	11 - 25 units	5.45	6.00	6.53	7.11	7.75
Tier 4	26 units & above	6.15	7.00	7.61	8.30	9.04
<u>Commercial Rate Tiers</u>						
Tier 1	0 - 5 units	\$4.52	\$4.52	\$4.89	\$5.33	\$5.81
Tier 2	6 units & above	4.84	5.25	5.71	6.22	6.78
* 1 hcf = one hundred cubic feet or approximately 748 gallons.						

MPWD's water rates include two components:

- A **Fixed Monthly Charge** that varies based on meter size. This charge is levied independent of water use and recovers a portion of the District's fixed costs for providing service. The District incurs a substantial amount of costs ensuring 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. MPWD's Fixed Monthly Charges were previously designed to recover 20% of total rate

revenues. However, due to a reduction in water sales, fixed charges currently generate roughly 23% of rate revenues. This percentage is substantially below the California Urban Water Conservation Council’s Best Management Practice for retail water conservation pricing which targets fixed rate recovery at or below 30% of total rate revenues.

- Volumetric **Water Consumption Charges** billed based on metered water use. Single family residential customers are billed according to a 4-tiered inclining rate structure with water first billed in Tier 1 and subsequently billed in higher, more expensive, tiers as water use increases each billing period. All other customers, including commercial, institutional, and multi-family accounts, are billed according to a 2-tiered inclining rate structure. Water Consumption Charges are billed per hundred cubic feet (hcf), with 1 hcf equal to approximately 748 gallons of water. Consumption charges currently recover roughly a little under 75% of total rate revenues.

Figure 1 shows a history of monthly water bills for a single family residential customer with a 5/8” meters with different levels of water use. Average monthly use for a customer with median annual water consumption equates to 8 hcf per month, roughly 197 gallons per day. Roughly 60% of residential bills are at or below this level of water use.

Figure 1: Historical Monthly Single Family Residential Bills

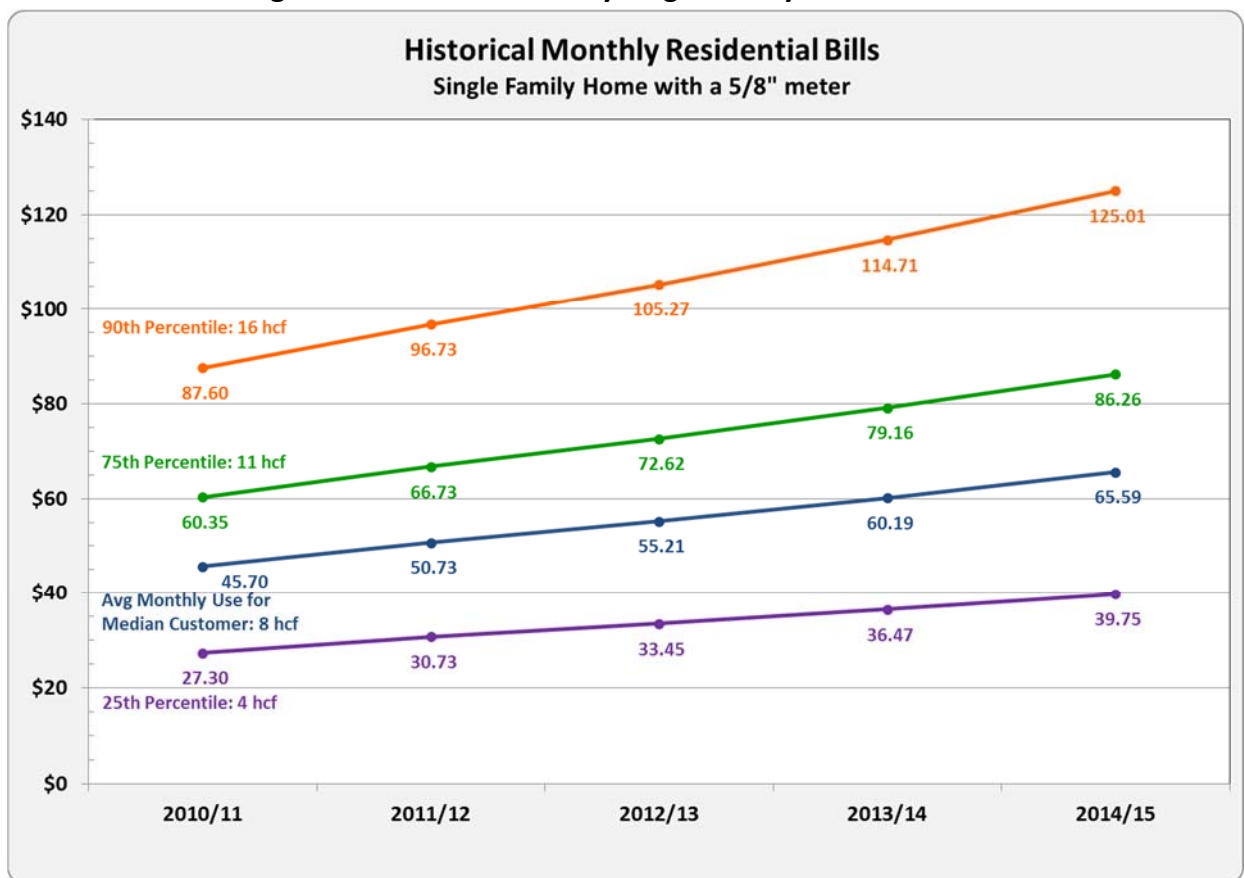
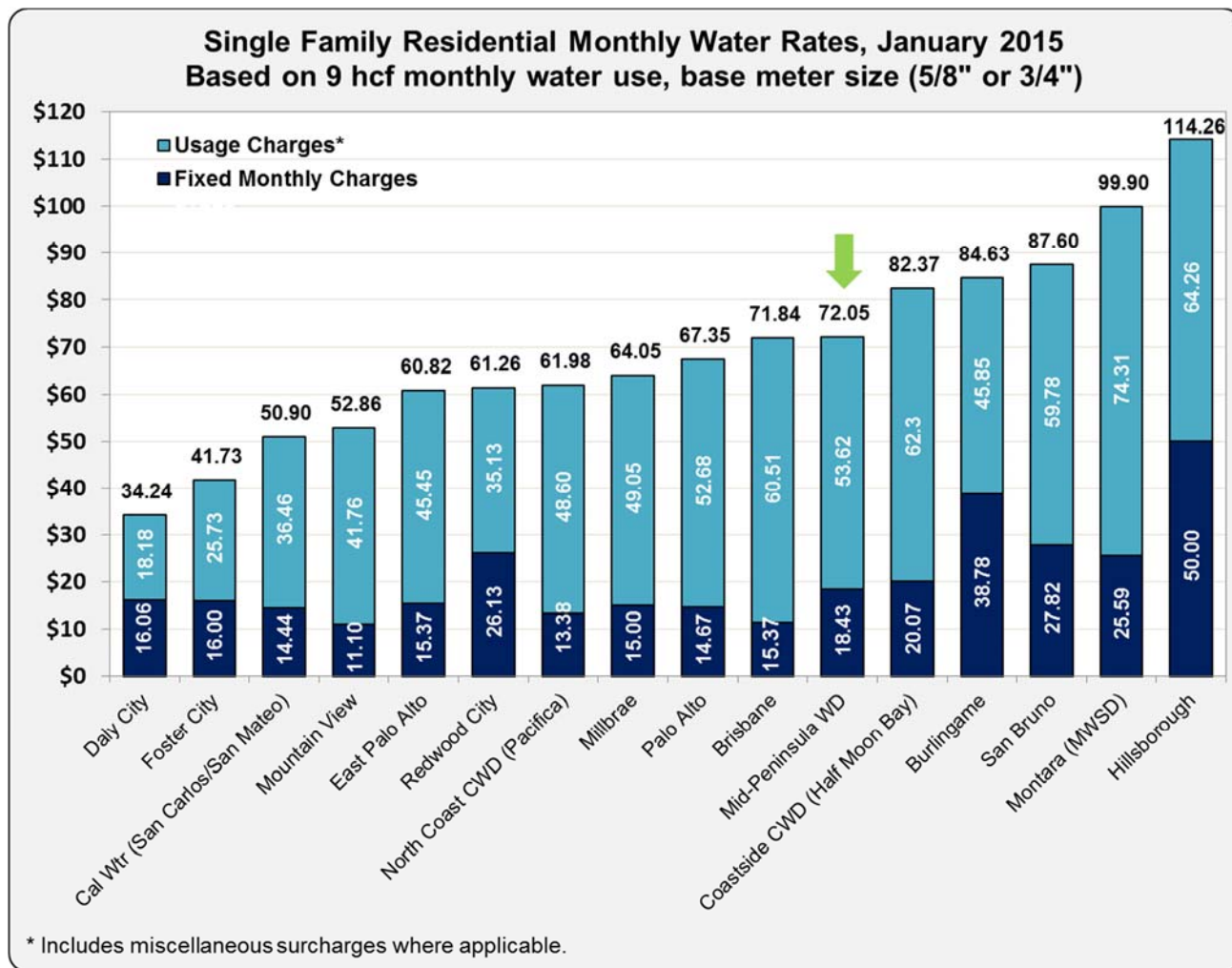


Figure 2 shows a survey of monthly regional water bills for a typical single family home with monthly water use of 9 hcf. MPWD’s rates are in the middle range compared to other local and regional agencies. Many of these agencies obtain wholesale water from the SFPUC and will also be implementing rate increases over the next few years.

Figure 2: Monthly Single Family Residential Water Bill Survey



3 WATER ACCOUNTS, SUPPLY & DEMAND

3.1 Water Accounts

The District currently serves a population of approximately 27,000 residential and commercial customers in the City of Belmont and surrounding areas. MPWD provides service to approximately 7,900 accounts, roughly 90% of which are served by 5/8-inch water meters. The majority of the District’s customers are residential customers.

Table 2. Accounts by Customer Class & Meter Size

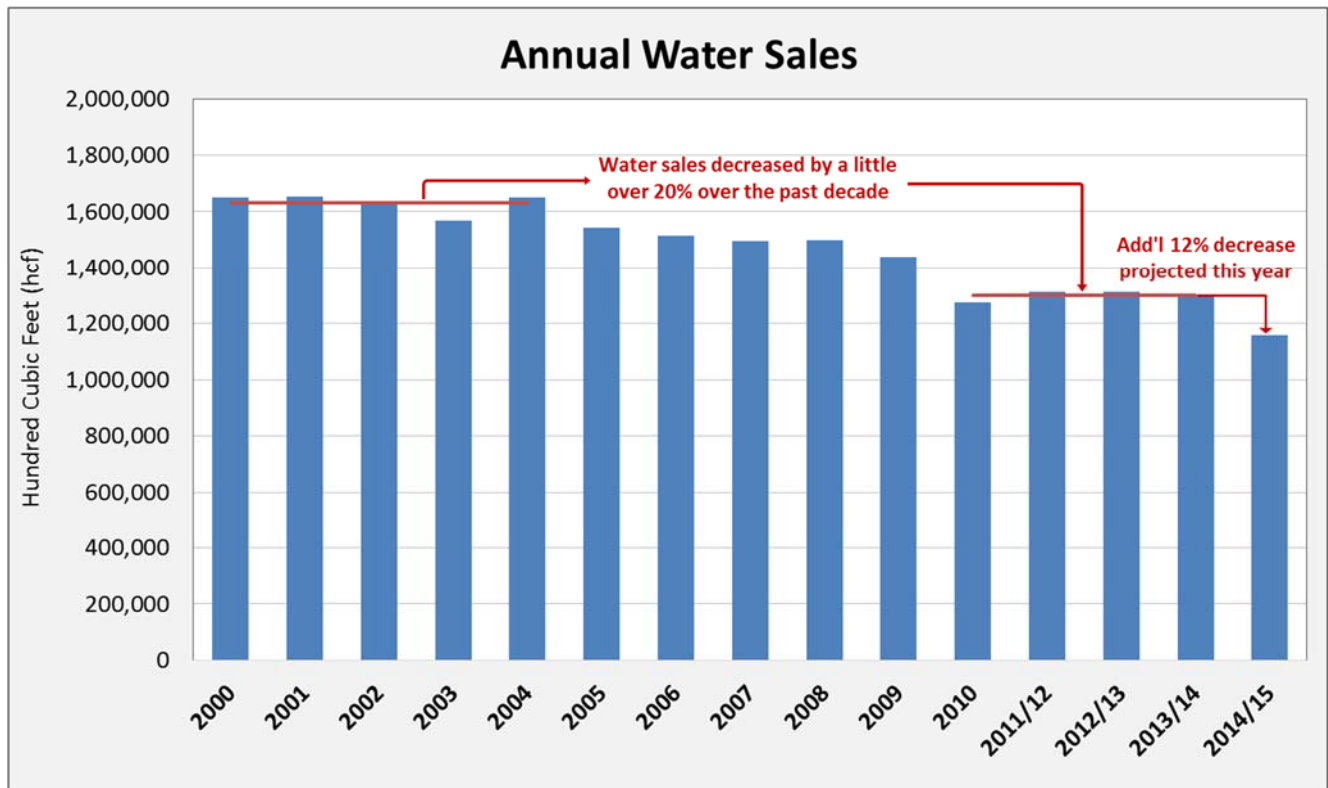
Meter Size	Residential	Apartment	Commercial	Other Public Authority	Total	% of Total
5/8"	6,770	20	259	25	7,074	89.6%
1"	330	61	86	18	495	6.3%
1 1/2"	27	48	48	20	143	1.8%
2"	3	64	57	24	148	1.9%
3"	0	5	5	4	14	0.2%
4"	0	4	5	4	13	0.2%
6"	0	2	1	2	5	0.1%
Total	7,130	204	461	97	7,892	100.0%
% of Total	90.3%	2.6%	5.8%	1.2%	100.0%	

3.2 Water Consumption

Figure 3 illustrates historical water consumption since 2000. As shown on the chart, water sales decreased by roughly 20% over the past decade, and are projected to decrease by roughly an additional 12% in the current year.

California is experiencing one of the most serious droughts on record. On April 1, 2015 the Governor issued an Executive Order directing the State Water Resources Control Board (SWRCB) to implement mandatory water conservation regulations to reduce water usage by 25% statewide. To achieve these savings, the SWRCB adopted emergency regulations to set water conservation targets for communities around the State. Agencies that fail to achieve the required reductions could be subject to penalties of up to \$10,000 per day. Based on the State’s draft cutback targets, MPWD will be required to reduce water demand by 20% from demand in calendar year 2013. The District is already more than half-way toward meeting this requirement.

Figure 3: Annual Water Consumption



The District purchases 100% of its water supply from the SFPUC. MPWD’s current annual Individual Supply Guarantee (ISG) from the SFPUC is 1,810,240 hcf per year. Since 2009, the District has on average purchased 1,432,000 hcf per year, roughly 79% of the SFPUC supply assurance. For 2014, MPWD purchased 1,279,000 hcf of water, equivalent to 71% of its supply assurance. Figure 4 shows a comparison of water purchases and water sales for the past 6 years.

The District’s water supply from SFPUC is subject to limitation by a Water Shortage Allocation Plan which specifies how water will be allocated among the District and the other wholesale customers during a drought. The Tier 1 Plan describes how water is allocated between the City of San Francisco (to be delivered to its retail customers) and the wholesale customers collectively. The Tier 2 Plan, called the Drought Implementation Plan (DRIP), details how the wholesale customers’ collective allocation is divided among the wholesale customers during a water supply shortage. The plan takes into consideration each agency’s 3-year average winter use and their respective SFPUC supply assurance in order to determine each agency’s allotment. BAWSCA manages the DRIP and developed a model to calculate allotments for each agency in the event that SFPUC declares a water-shortage. In the latest draft calculations for a system-wide shortage of 20%, MPWD’s allotment is estimated at 1,414,500 hcf. If the SFPUC declares a shortage, the actual amount of water available to the City and the other wholesale customers would be determined at that time based upon projected demands and the total amount of water available system-wide.

Figure 4: Comparison of SFPUC Water Purchases vs. Water Sales

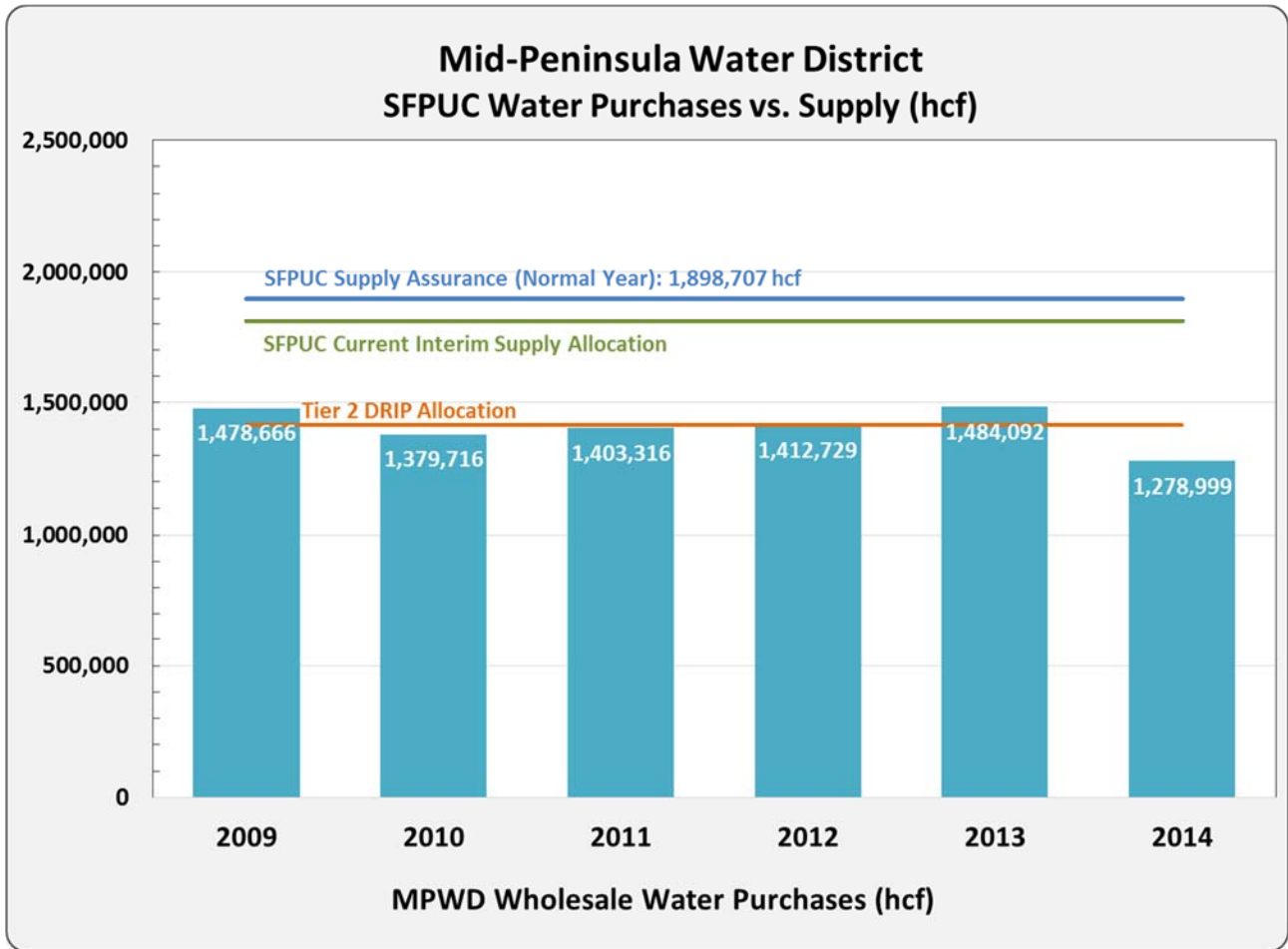


Figure 5 shows a breakdown of consumption by customer class. Single family residential customers consume about 60% of all water in the District, followed by commercial and apartments which each represent 17% of total consumption. Public authority customers account for the remainder or 6% of all use in the District.

Figure 5: Water Consumption by Class

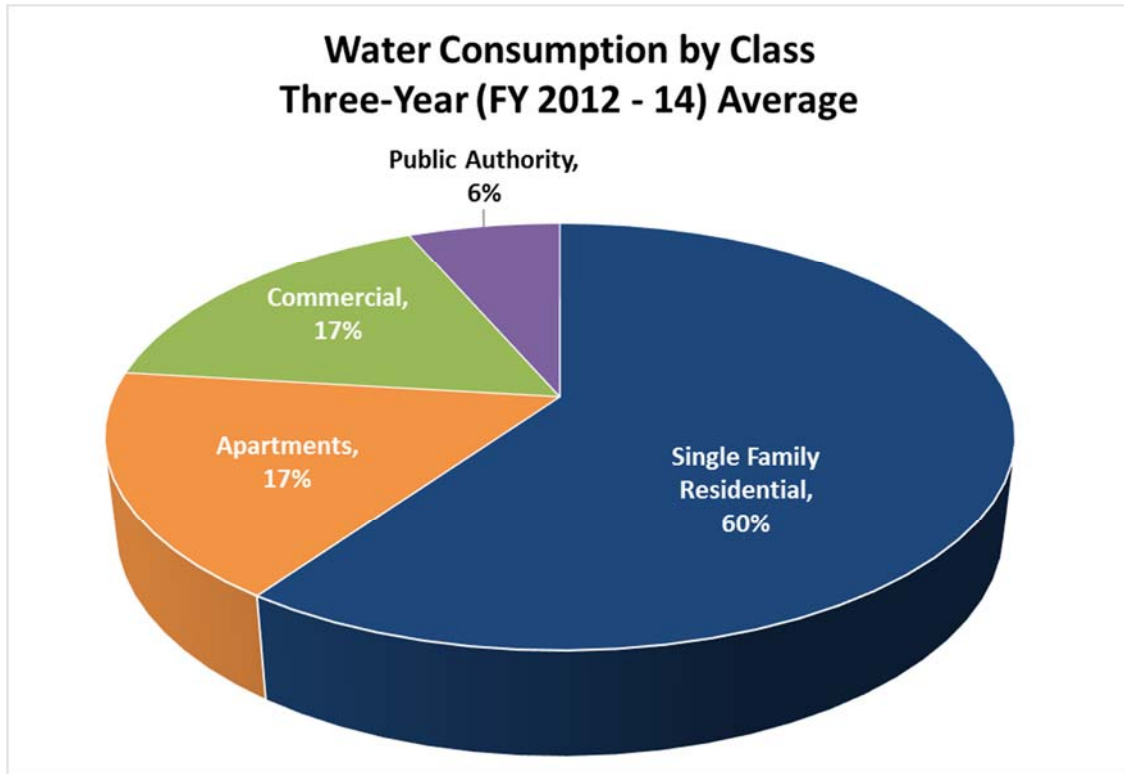


Figure 6 shows a distribution of single family residential bills ending in each rate tier along with the volume of water sales and consumption revenues within each tier.

Figure 6: Percentage of Single Family Residential Bills, Consumption, and Revenue by Tier

Single Family Water Bills, Use by Tier							
		Bills Ending in Tier		Water Use in Tier		Revenues at Current Rates	
		#	%	hcf	%	\$	%
Tier 1	0 - 2 hcf	7,758	9.1%	166,994	21.4%	\$701,375	14.2%
Tier 2	3 - 10 hcf	52,398	61.2%	420,112	53.9%	2,713,924	54.9%
Tier 3	11 - 25 hcf	22,617	26.4%	163,247	21.0%	1,265,164	25.6%
Tier 4	26+ hcf	<u>2,895</u>	<u>3.4%</u>	<u>28,774</u>	<u>3.7%</u>	<u>260,117</u>	<u>5.3%</u>
Total		85,668	100.0%	779,127	100.0%	4,940,580	100.0%

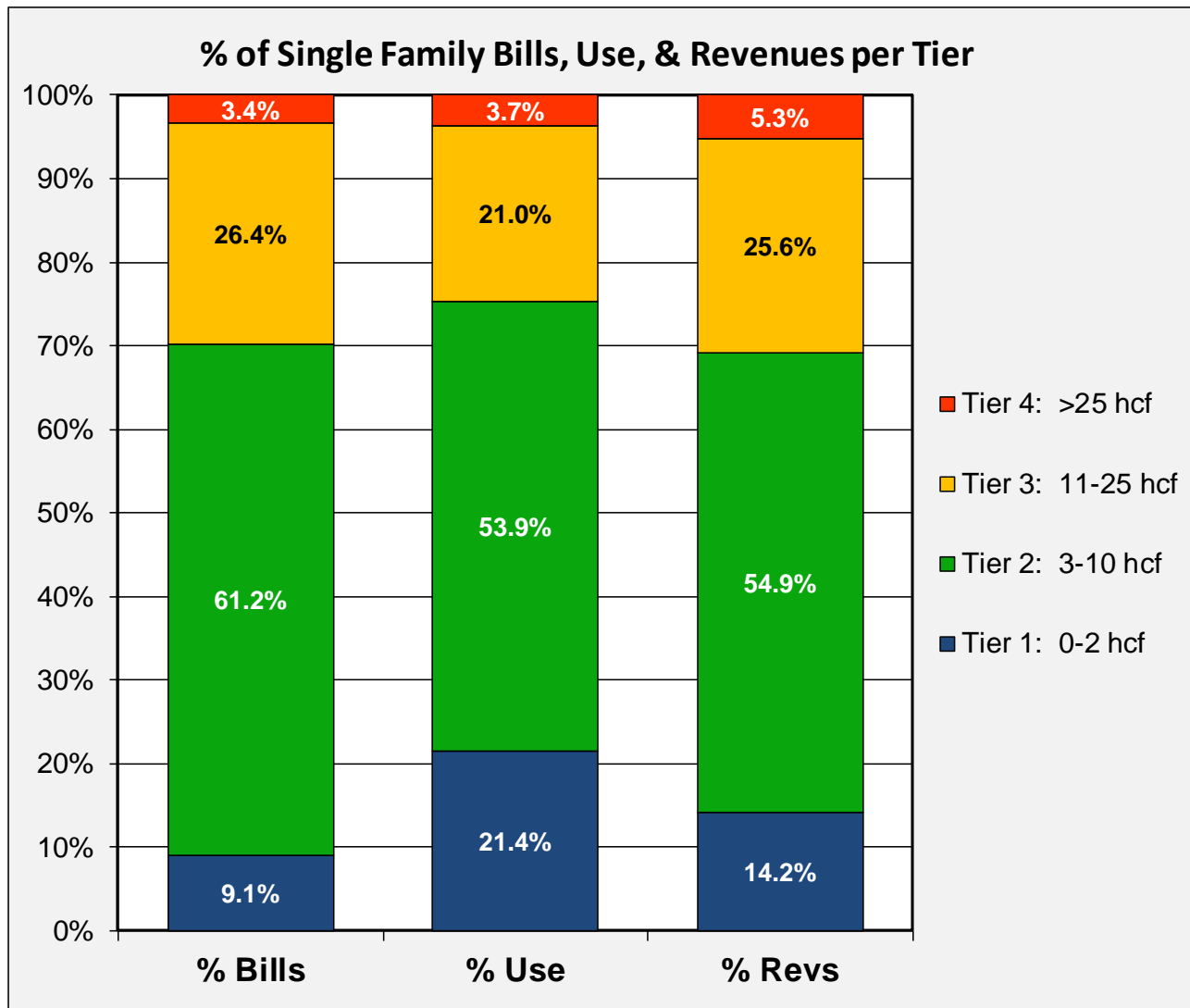
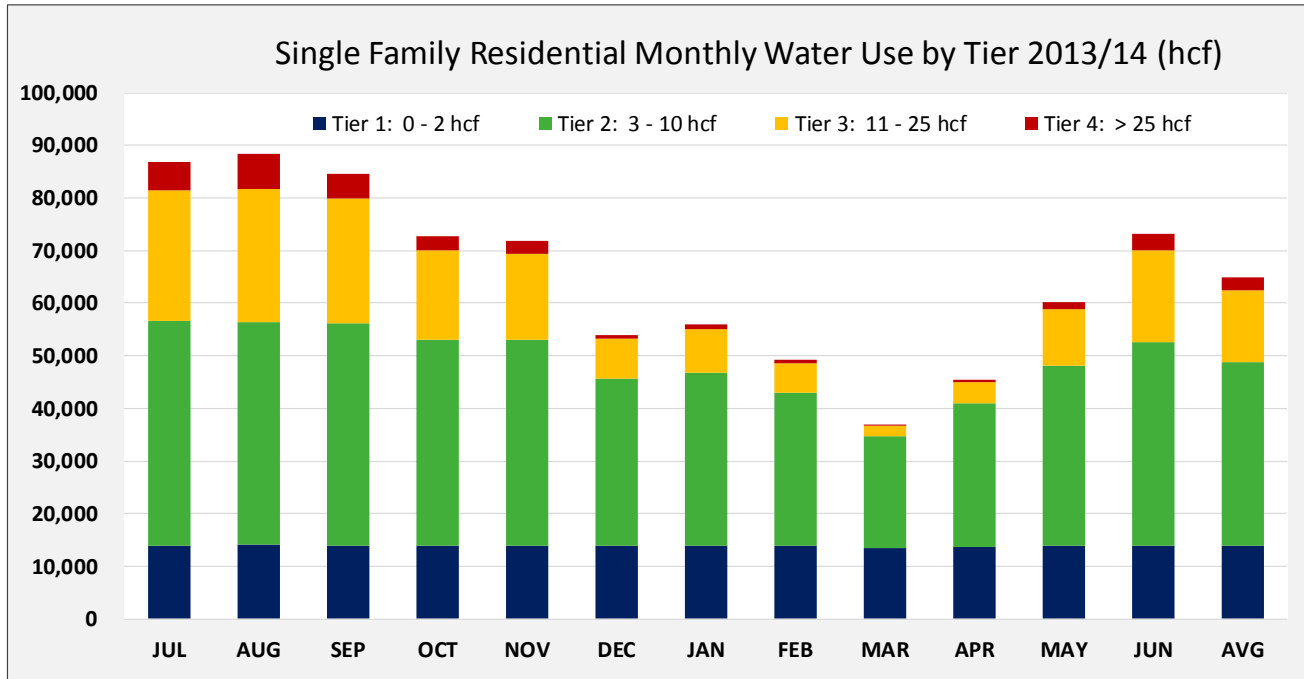


Figure 7 shows single family residential consumption by tier per month for fiscal year 2013/14. Water use roughly doubles in the hotter, drier summer months compared to wetter winter months. This is particularly so for use in the higher tiers.

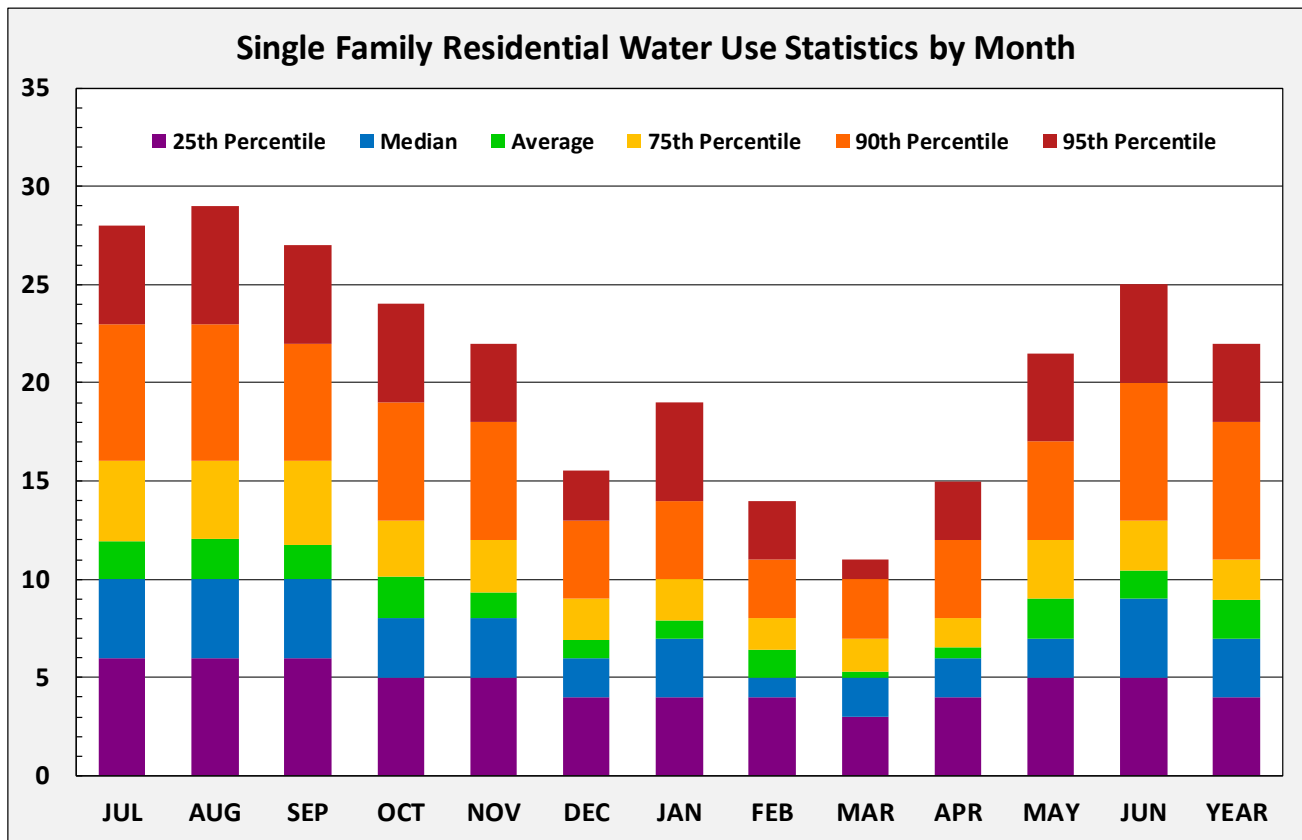
Figure 7: 2013/14 Single Family Residential Monthly Water Use by Tier



	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Number of Bills by Tier													
Tier 1 0 - 2 hcf	405	398	412	482	492	715	679	810	1,326	919	629	529	7,796
Tier 2 3 - 10 hcf	3,321	3,361	3,381	3,958	4,046	4,951	4,882	5,194	5,343	5,302	4,628	3,937	52,304
Tier 3 11 - 25 hcf	2,894	2,795	2,853	2,416	2,334	1,374	1,473	1,067	446	867	1,728	2,362	22,609
Tier 4 > 25 hcf	515	581	489	279	263	95	101	64	20	47	150	307	2,911
Total	7,135	7,135	7,135	7,135	7,135	7,135	7,135	7,135	7,135	7,135	7,135	7,135	85,620
Water Use in Tier													
Tier 1 0 - 2 hcf	14,005	14,025	14,015	13,966	13,968	13,866	13,849	13,836	13,566	13,749	13,891	13,953	166,689
Tier 2 3 - 10 hcf	42,534	42,403	42,139	39,030	39,004	31,742	32,845	29,169	21,215	27,126	34,201	38,559	419,967
Tier 3 11 - 25 hcf	24,896	25,309	23,626	17,071	16,496	7,627	8,390	5,531	2,024	4,156	10,696	17,632	163,454
Tier 4 > 25 hcf	5,291	6,538	4,811	2,588	2,356	785	843	607	205	480	1,382	3,131	29,017
Total	86,726	88,275	84,591	72,655	71,824	54,020	55,927	49,143	37,010	45,511	60,170	73,275	779,127

Figure 8 shows single family residential consumption for bills representing different percentiles of use during each month. For example, the median single family bill (representing the mid-point with half of all bills at or above or at or below this level) was 5 hcf in February and March, but was twice as high at 10 hcf in the months of July through September.

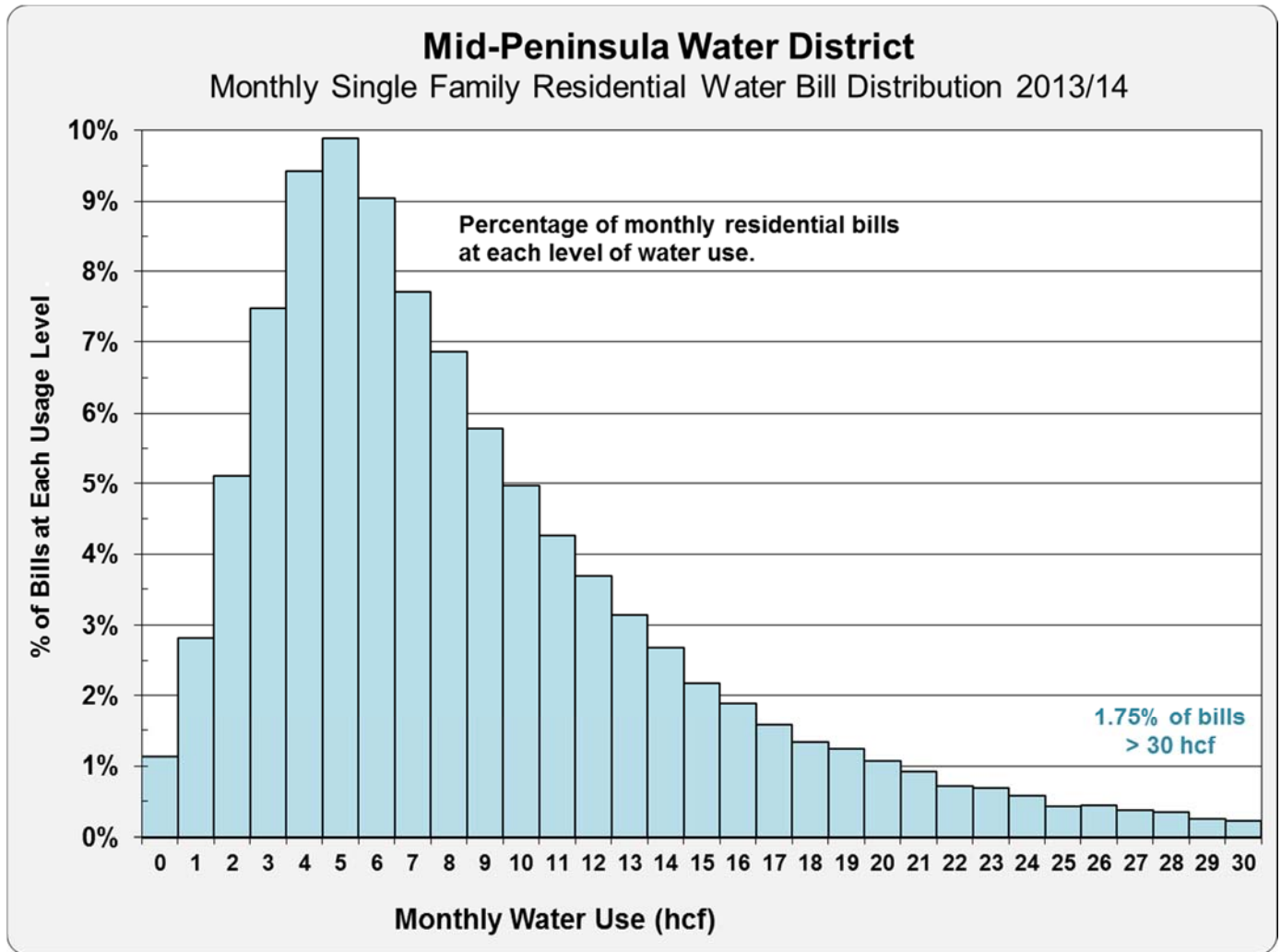
Figure 8: 2013/14 Single Family Residential Water Use Statistics by Month



	JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	ANNUAL
25th Percentile	6.0	6.0	6.0	5.0	5.0	4.0	4.0	4.0	3.0	4.0	5.0	5.0	4.0
Median	10.0	10.0	10.0	8.0	8.0	6.0	7.0	5.0	5.0	6.0	7.0	9.0	7.0
Average	11.9	12.0	11.7	10.1	9.4	6.9	7.9	6.4	5.3	6.6	9.0	10.4	9.0
75th Percentile	16.0	16.0	16.0	13.0	12.0	9.0	10.0	8.0	7.0	8.0	12.0	13.0	11.0
90th Percentile	23.0	23.0	22.0	19.0	18.0	13.0	14.0	11.0	10.0	12.0	17.0	20.0	18.0
95th Percentile	28.0	29.0	27.0	24.0	22.0	15.5	19.0	14.0	11.0	15.0	21.5	25.0	22.0
<i>Average monthly use for a customer with median annual usage</i>													7.9

Figure 9 shows a distribution of single family residential bills for each level of water use based on utility billing data from fiscal year 2013/14.

Figure 9: Single Family Residential Water Bill Distribution



4 LEGAL REQUIREMENTS & RATE METHODOLOGY

4.1 Constitutional Rate Requirements

The California Constitution includes two key articles that directly govern or impact the District's water rates: Article 10 and Article 13D. The water rates developed in this study were designed to comply 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 District's cost of providing service, b) recover revenues in proportion to the cost for serving each customer, and c) promote conservation and discourage waste.

4.1.1 Article 10, Section 2

Article 10, Section 2 of the California Constitution was established by voter-approval in 1976 and requires public agencies 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.

4.1.2 Article 13D, Section 6

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 a) procedural requirements for imposing or increasing property-related charges, and b) substantive requirements for those charges. Article 13D also requires voter approval for new or increased property-related charges but exempts rates for water, sewer, and garbage service from this voting requirement if the appropriate procedure is followed.

The substantive requirements of Article 13D, Section 6 require JBWD's water 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.

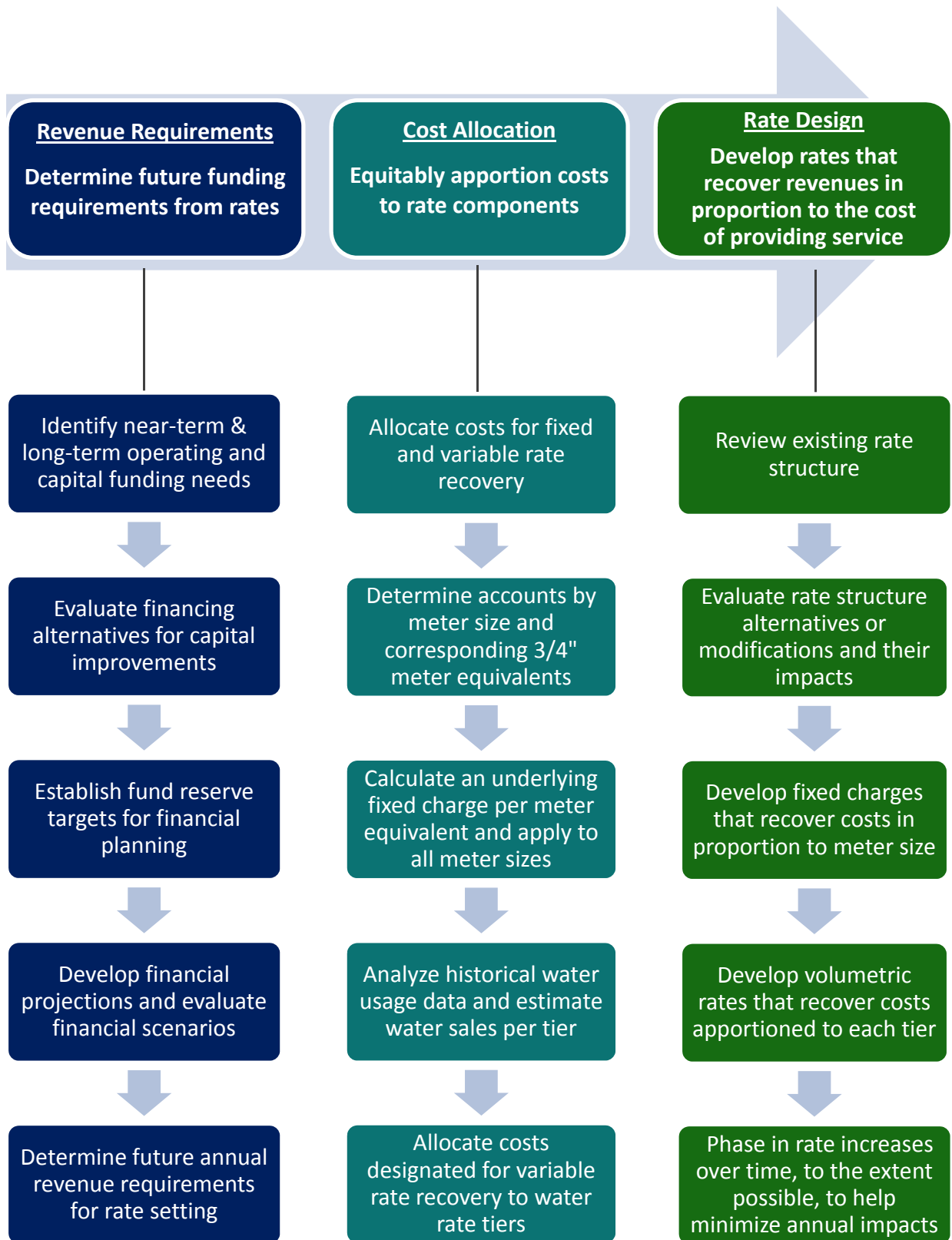
- 2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
- 3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable 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.

Roughly two-thirds to three-quarters of public agencies in California, including MPWD, have adopted tiered water rates for purposes of encouraging conservation and dis-incentivizing high levels of water use, particularly for outdoor landscape irrigation. A recent appeals court decision in *Capistrano Taxpayers Association, Inc. v. City of San Juan Capistrano* clarified that tiered water rates are permissible provided they can be shown to reasonably reflect the cost of providing water service to each tier. The water rates derived in this report are based on a cost-of-service methodology that reasonably and equitably apportions costs to each of the District's water rate components and tiers.

4.2 Rate-Setting Methodology

The rates developed in this report use a straightforward methodology to establish an equitable system of fixed and variable charges that recover the cost of providing service and fairly apportion costs to each rate component. The general methodology used in this study is summarized on the diagram on the following page.

Cost of Service Rate-Setting Methodology



5 DISTRICT FINANCES & CASH FLOW PROJECTIONS

5.1 Financial Overview

MPWD is a financially self-supporting agency that relies primarily on revenues from water System Charges to fund the costs of providing service. Water rate revenues have historically accounted for approximately 93% of total annual revenues, with the remaining revenues coming from interest earnings, property taxes, lease revenues, capacity 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 District currently has \$4.4 million in total capital, emergency and working capital (operating) fund reserves. However, the District anticipated drawing down fund reserves to a level of approximately \$2.5 million by the end of 2014/15.
- Actual consumption over the past 5 years has been lower than projected due to factors likely including the economy, District conservation efforts, and response to the current multi-year drought, which has resulted in lower water sales revenues.
- MPWD's average single family residential monthly residential water bill for a home using 9 hcf of water per month is in the middle range compared to other regional agencies.
- MPWD relies on imported water from the SFPUC for 100% of its supply. The SFPUC has doubled its wholesale water rates over the past five years and is planning to increase wholesale rates by an additional 61% over the next five years, including a proposed 28% increase effective July 1, 2015. Water purchases account for nearly 50% of all operating expenditures.
- The District's Capital Improvement Program identifies approximately \$33.4 million in infrastructure improvements to address existing deficiencies and rehabilitation/replacement needs for aging infrastructure. Annual capital funding needs are estimated at roughly \$2 million each year.
- The State is in the fourth year of severe drought. New State regulations require MPWD to reduce water demand by 20% from calendar year 2013 levels or face the prospect for fines.

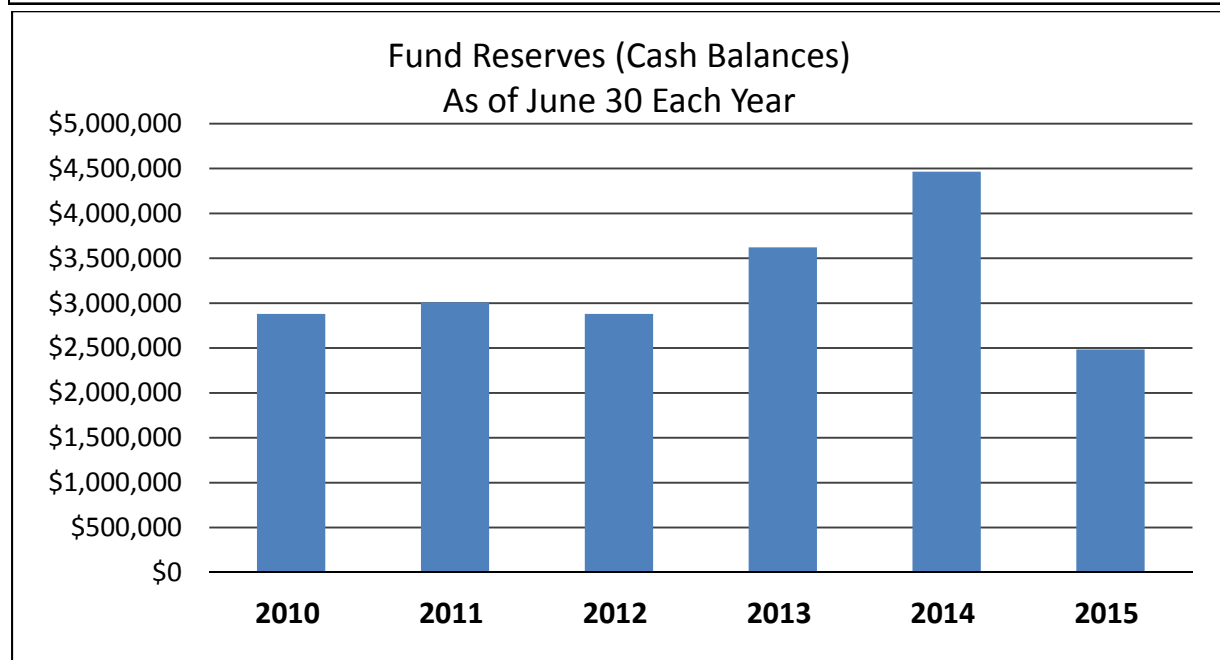
5.2 Fund Reserves

Table 3 shows a history of fund reserves as of June 30 each year. Maintaining a prudent minimal level of fund reserves provides a financial cushion for dealing with unanticipated expenses, revenue shortfalls, and non-catastrophic emergency capital repairs.

Table 3. Historical, Current, & Projected Total Fund Reserves

As of June 30	2010	2011	2012	2013	2014	2015
Fund Reserves	\$2,879,560	\$3,007,864	\$2,879,560	\$3,621,126	\$4,465,380	\$2,483,400
Annual O&M	Estimated \$6,379,460	Estimated \$6,342,000	Estimated \$7,261,500	Actual 8,148,708	Projected 8,171,454	Projected 8,731,000
% of O&M Costs	45.1%	47.4%	39.7%	44.4%	54.6%	28.4%
Days of O&M	165	173	145	162	199	104

Source: Audited Financial Statements, Total Cash and Equivalents



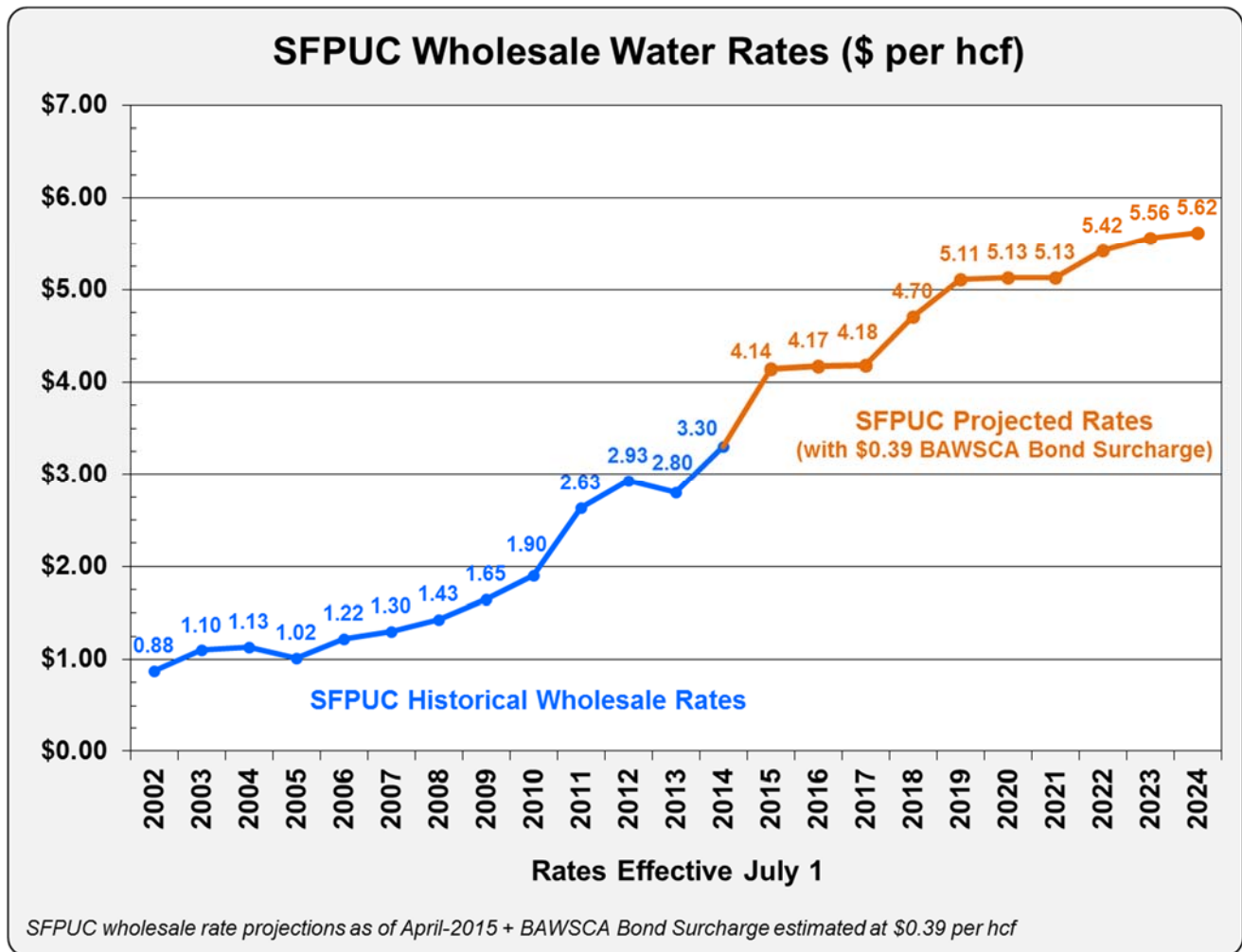
5.3 Financial Challenges

MPWD is facing a number of manageable financial challenges in upcoming years. Key drivers of future rate increases are summarized as below.

5.3.1 SFPUC Wholesale Water Rate Increases

MPWD currently 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 MPWD. To help fund these upgrades, the SFPUC has doubled its wholesale water rates over the past 5 years and is planning to raise wholesale rates by over 60% in the next 5 years, including a proposed 28% SFPUC wholesale water rate increase effective July 1, 2015. Figure 9 shows historical and projected SFPUC wholesale water rates.

Figure 9: Historical & Projected SFPUC Wholesale Water Rates



5.3.2 Capital Improvement Plan

MPWD's Capital Improvement Plan identifies approximately \$33.4 million (current \$) of infrastructure needs to address existing system deficiencies, improve system reliability during periods of peak demand, and help fund the upgrade and replacement of aging and/or substandard water distribution pipelines as detailed on Table 4 on the following page. Based on input from the District engineer, the financial projections assume a phase in of capital funding from approximately \$1.5 million to \$2 million annually over the next three years.

5.3.3 Ongoing Cost Inflation

The District 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.

5.3.4 Decline in Water Sales

The District's revenues have been negatively impacted by a decline in water sales and corresponding water rate revenues. Revenues may be further impacted due to additional conservation and cutbacks in customer demand in upcoming years. Reduced water sales put upward pressure on rates but not necessarily water bills, since customers who cut back water use pay for fewer units of water.

Table 4. Capital Improvement Projects

Project No.	Description	Total Cost (2014 \$) ¹
ZONE 3		
15-09	Dekoven Tank Utilization Project	\$1,005,000
15-10	Notre Dame Avenue Loop Closure Project	918,000
15-11	Carmelita Avenue Water Main Improvement Project	565,000
15-12	Buena Vista Avenue Improvement Project	525,000
15-13	Monroe, Bellemonti, Coronet Avenue Water Mains Improvement Project	1,408,000
15-14	Mezes Avenue Water Main Improvement Project	155,000
15-15	Shirley Road Water Main Improvement Project	287,000
15-16	Williams Avenue, Ridge Road, Hillman Avenue Water Main Improvements Project	1,046,000
15-17	Monte Cresta Drive, Alhambra Drive Water Main Improvement Project	978,000
15-18	Pine Knoll Drive Water Main Improvement Project	224,000
15-19	Oak Knoll Drive Water Main Project	583,000
15-20	Thurm and Bettina Avenues Water Main Improvement Project	480,000
15-21	Lincoln, Monserat Avenues Water Main Improvement Project	100,000
15-22	Arhtur Avenue Water Main Improvement Project	385,000
15-23	Dekoven Tanks Structural and Seismic Evaluation	55,000
15-24	San Juan Boulevard Water Main Improvements Project	257,000
15-25	Lyons Avenue Extended Period Simulation - TBD	tbd
15-26	Cipriani Blvd Extended Period Simulation - TBD	tbd
	Total Zone 3	8,971,000
ZONE 4		
15-08	Zone 4 Water Main Improvement Project	\$693,000
	Total Zone 4	693,000
ZONE 5		
15-01	Buckland / Shelford Avenue Improvement Project	\$92,000
15-02	Courtland Road Water Main Improvement Project	315,000
15-03	Spring Lane Water Main Improvement Project	126,000
15-04	Rose Lane Water Main Improvement Project	91,000
15-05	Calwater Intertie	152,000
15-06	Zone 5 Fire Hydrant Upgrade Project	115,000
	Total Zone 5	891,000
ZONE 6		
15-07	Zone 6 Water Main Improvement Project	\$174,000
	Total Zone 6	174,000
ZONE 9		
None		
	Total Zone 9	0
SUBTOTAL ZONES 3, 4, 5, 6, 9 (rounded)		\$10,700,000
Accounts/Services		2552
Average Cost per Account/Service		\$4,193
ADDITIONAL ZONES		
<i>Note: Conservative cost estimates shown; actual costs for these zones are anticipated to be higher based on initial engineering estimates.</i>		
ZONES 1, 2, 7, 8		
Accounts/Services		5423
Average Cost per Account/Service		\$4,193
SUBTOTAL ZONES 1, 2, 7, 8 (rounded)		\$22,700,000
GRAND TOTAL ALL ZONES		\$33,400,000

¹ Source: Mid-Peninsula Water District Capital Improvement Program with Engineering Cost Estimates (2014 \$)

5.4 Water Enterprise Financial Projections

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

WATER SALES & PURCHASES

- Total water sales for 2014/15 are conservatively projected at 1,160,000 hcf based on year-to-date sales. This level of water sales is about 13% lower than the previous year.
- The volume of future SFPUC water purchases are estimated based on 1,160,000 hcf of water sales plus 7% for water losses.
- Future SFPUC wholesale water rates are based on the most-recent SFPUC rate projections from April 2015. SFPUC rates are projected to increase by over 60% over the next 5 years including a 28% rate increase adopted for 2015/16.

REVENUE PROJECTIONS

- Rate adjustments will go into effect July 1 of each year with the first rate adjustment effective July 1, 2015.
- Growth is conservatively estimated at 20 new single family homes or equivalents per year through 2017/18. Beginning in 2018/19 and continuing thereafter, the projections assume 10 new units per year.
- Water sales revenues are projected based on slightly-conservative estimates for the current fiscal year adjusted to account for projected rate increases.
- Interest earnings are projected based on the beginning fund balance projected each year and projected interest rates that gradually increase from 0.30% in 2014/15 to 1.0% in 2018/19.
- Property tax revenues are projected at \$245,000 for 2014/15 and are escalated by 3% per year.
- Lease rental revenues are based on current year estimates of \$238,000 and escalate at the annual rate of 3%.
- Capacity charge revenues are based on projected growth multiplied by the updated capacity charges.
- Other revenues are projected at roughly \$50,000 per year including fire System Charges, service line and installation charges, water demand offset charges, and temporary construction connection charges.

EXPENSE PROJECTIONS

- 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 dated from April 2015 and include a true-up for the prior fiscal year. Future BAWSCA surcharges may vary depending on the District's share of total water use from all BAWSCA agencies.
- Operating and maintenance expenses are based on updated District estimates for 2014/15 and District projections for 2015/16.
- Future operating cost inflation is projected at 4% per year.
- Capital improvements are phased in from approximately \$1.5 million to \$2 million per year over the next three years.
- With the projected rate increases, the District is projected to maintain balanced budgets.

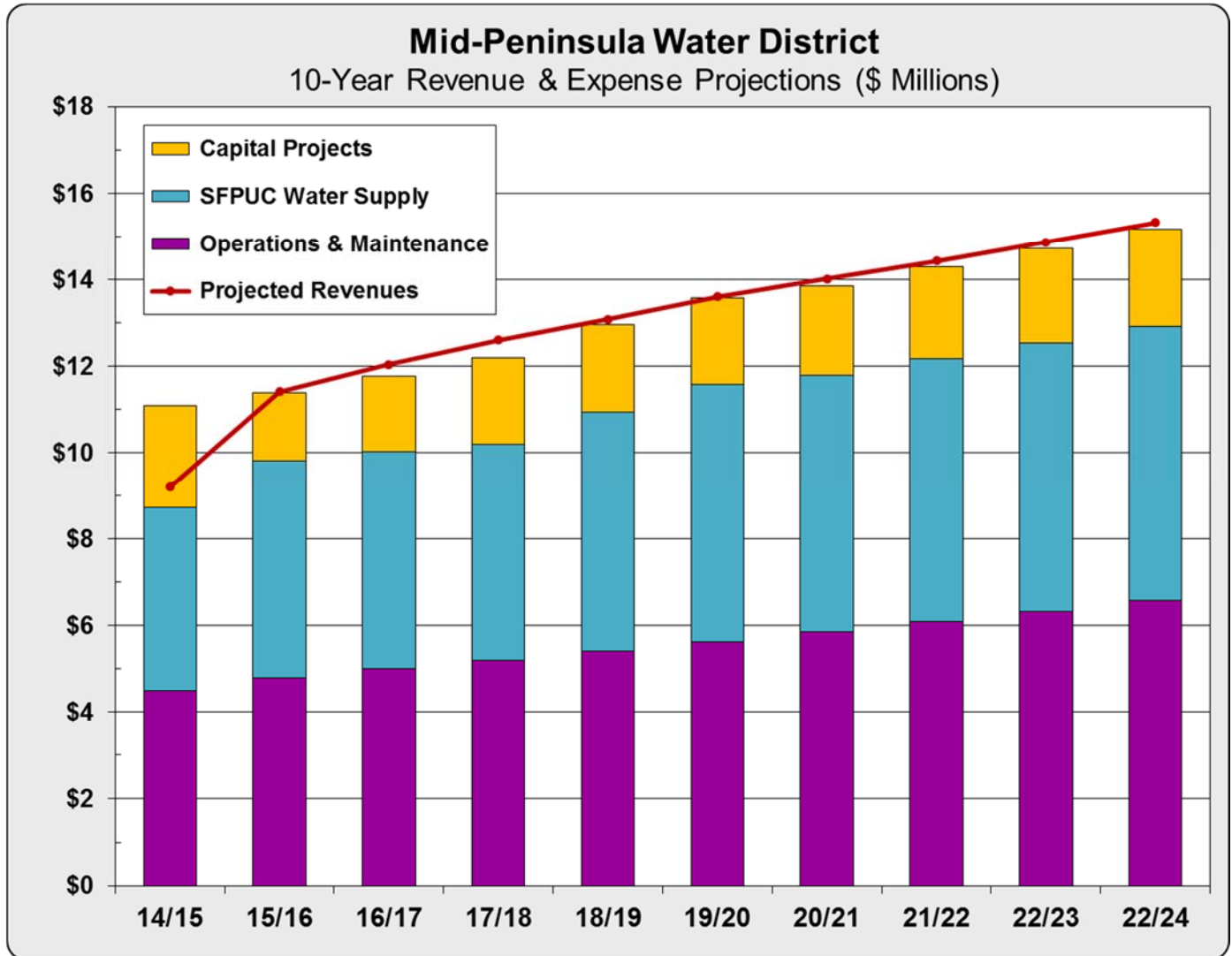
The table on the following page shows 10-year cash flow projections incorporating the assumptions described above. The rate projections shown on the table are designed to fund the District's cost of providing service while maintaining balanced budgets and prudent minimal levels of fund reserves each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

Mid-Peninsula Water District Cash Flow Projections

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Rate Adjustments	9%	18%	6%	6%	6%	6%	3.5%	3.5%	3.5%	3.5%
Growth in Service Connections		20	20	20	10	10	10	10	10	10
Water System Capacity Charge	\$1,450	\$9,375	\$9,560	\$9,750	\$9,950	\$10,150	\$10,350	\$10,560	\$10,770	\$10,990
Change in Water Sales	-13.00%	-4.40%	-1.02%	-1.02%	-1.02%	-1.02%	-0.60%	-0.60%	-0.60%	-0.60%
Change in Sales Revenues	-14.56%	-4.95%	-1.15%	-1.15%	-1.15%	-1.15%	-0.67%	-0.67%	-0.67%	-0.67%
Total Water Sales (hcf)	1,160,000	1,109,000	1,097,700	1,086,500	1,075,400	1,064,400	1,058,100	1,051,800	1,045,500	1,039,300
SFPUC Water Supply (hcf) +7%	1,241,200	1,186,600	1,174,500	1,162,600	1,150,700	1,138,900	1,132,200	1,125,400	1,118,700	1,112,100
Reduction in Supply Since 2013	-16.4%	-20.0%	-20.9%	-21.7%	-22.5%	-23.3%	-23.7%	-24.2%	-24.6%	-25.1%
SFPUC Rate per hcf	\$2.93	\$3.75	\$3.78	\$3.79	\$4.31	\$4.72	\$4.74	\$4.90	\$5.03	\$5.17
Interest Earnings Rate	0.30%	0.30%	0.50%	0.75%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Cost Escalation		4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%
Beginning Fund Balances	\$4,377,000	\$2,483,000	\$2,512,000	\$2,778,000	\$3,195,000	\$3,322,000	\$3,344,000	\$3,498,000	\$3,632,000	\$3,781,000
REVENUES										
Monthly Service Charges	2,050,000	2,420,000	2,654,000	2,879,000	3,103,000	3,294,000	3,414,000	3,538,000	3,667,000	3,801,000
Water Sales	6,570,000	8,229,000	8,620,000	8,933,000	9,248,000	9,564,000	9,832,000	10,108,000	10,392,000	10,684,000
Subtotal Rate Revenues	8,620,000	10,649,000	11,274,000	11,812,000	12,351,000	12,858,000	13,246,000	13,646,000	14,059,000	14,485,000
Interest Revenue	10,000	7,000	13,000	21,000	32,000	33,000	33,000	35,000	36,000	38,000
Lease of Physical Property	238,000	248,000	255,000	263,000	271,000	279,000	287,000	296,000	305,000	314,000
Property Taxes	245,000	245,000	252,000	260,000	268,000	276,000	284,000	293,000	302,000	311,000
Capacity Charges	50,000	188,000	191,000	195,000	100,000	102,000	104,000	106,000	108,000	110,000
Other/Miscellaneous Revenues	34,400	79,000	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000
Total Revenues	9,197,400	11,416,000	12,035,000	12,603,000	13,076,000	13,604,000	14,012,000	14,436,000	14,872,000	15,322,000
EXPENSES										
<u>Operating & Maintenance</u>										
Personnel Costs	2,470,000	2,659,000	2,765,000	2,876,000	2,991,000	3,111,000	3,235,000	3,364,000	3,499,000	3,639,000
SFPUC Water Purchases	3,737,000	4,550,000	4,540,000	4,506,000	5,060,000	5,476,000	5,467,000	5,614,000	5,727,000	5,850,000
BAWSCA Bond Surcharge	500,000	461,000	480,000	480,000	480,000	480,000	480,000	480,000	480,000	480,000
Maintenance & Repair	500,000	524,000	545,000	567,000	590,000	614,000	639,000	665,000	692,000	720,000
Utilities	330,000	344,000	358,000	372,000	387,000	402,000	418,000	435,000	452,000	470,000
Professional Services	536,000	591,000	615,000	640,000	666,000	693,000	721,000	750,000	780,000	811,000
Wtr Conservation Prog & Rebates	72,000	73,000	76,000	79,000	82,000	85,000	88,000	92,000	96,000	100,000
Other Operating Costs	586,000	615,000	640,000	666,000	693,000	721,000	750,000	780,000	811,000	843,000
Subtotal	8,731,000	9,817,000	10,019,000	10,186,000	10,949,000	11,582,000	11,798,000	12,180,000	12,537,000	12,913,000
Capital Improvements	2,360,000	1,570,000	1,750,000	2,000,000	2,000,000	2,000,000	2,060,000	2,122,000	2,186,000	2,252,000
Total Expenses	11,091,000	11,387,000	11,769,000	12,186,000	12,949,000	13,582,000	13,858,000	14,302,000	14,723,000	15,165,000
Revenues Less Expenses	(1,893,600)	29,000	266,000	417,000	127,000	22,000	154,000	134,000	149,000	157,000
Ending Fund Balances	2,483,400	2,512,000	2,778,000	3,195,000	3,322,000	3,344,000	3,498,000	3,632,000	3,781,000	3,938,000

Figure 10 shows a 10-year projection of expenses broken down by key categories as well as projected annual revenues.

Figure 10: Projected Revenues & Expenses



5.5 Projected Rate Increases

Table 5 shows projected overall rate increases needed to meet the District’s annual revenue requirements. The proposed rate increases are phased in as gradually as possible, but include a larger increase in 2015/16 due primarily to account for an adopted 28% increase in SFPUC wholesale water rates that is scheduled to become effective on July 1, 2015.

Table 5. Proposed Rate Adjustments

	2015/16	2016/17	2017/18	2018/19	2019/20
Overall Rate Increase	18%	6%	6%	6%	6%

Actual impacts to customers’ monthly water bills will vary based on each customer’s level of consumption due to minor modifications to the rate structure. 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, MPWD can re-evaluate its future rate and revenue requirements based on future updates of long-term financial projections. The District 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.

6 RATE ANALYSIS

6.1 Rate Structure Modifications

The proposed rates developed in this report incorporate some relatively minor modifications to MPWD's rate structure designed to fairly apportion costs of service to all District customers in accordance with the substantive requirements of Article 13D, Section 6 of the California Constitution and reflect the policy preferences of the District and Board of Directors. Rate structure modifications are summarized as follows.

6.1.1 Fixed Meter Charge Modifications

The proposed rates incorporate the following modification to the MPWD's Fixed Charge:

- **Increase Fixed Rate Revenue Recovery from 20% to 25%** - The proposed Fixed Monthly Charges are designed to recover 25% of total rate revenues. The District's current Fixed Monthly Charges were originally designed to recover 20% of rate revenues. Due to recent decreases in water sales, fixed charges are currently estimated to generate a little over 23% of total rate revenues.

6.1.2 Consumption Charge Modifications

The proposed rates incorporate two modifications to MPWD's Water Consumption Charges. These modifications will result in a gradual increase in conservation incentive for single family residential customers at moderate to higher levels of water use. The proposed modifications include:

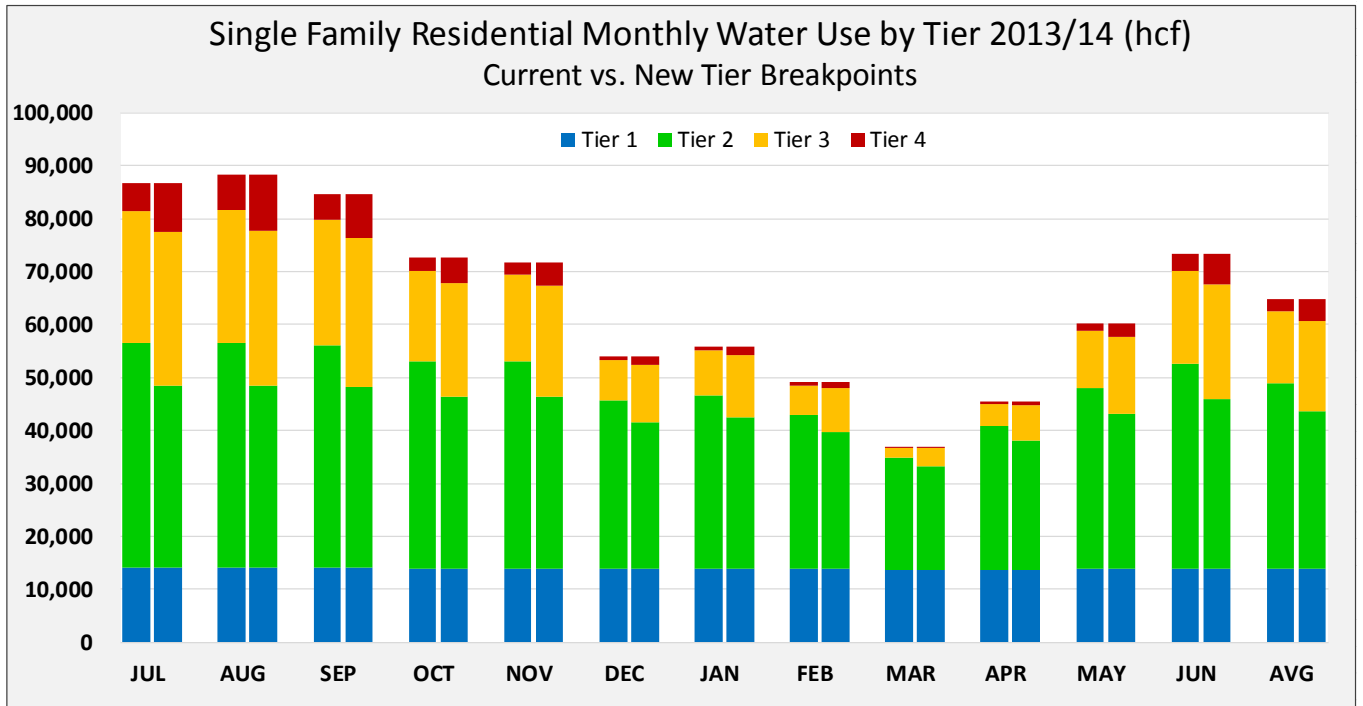
- **Target Variable Rate Revenue Recovery at 75% of Total Rate Revenues** - Under the proposed rates, the percentage of rate revenues recovered from MPWD's consumption rates is targeted to recover 75% of total rate revenues.
- **Revise Single Family Residential Tier Breakpoints** – Based on analysis of MPWD water consumption data and input from the District and the Board of Directors, small modifications to the single family residential tier breakpoints are proposed for Tiers 2, 3 and 4. These modifications reduce the tier breakpoints and are phased in over the next 2 years. The adjustments in the tier breakpoints better align the tier breakpoints with current single family residential consumption patterns. Table 6 shows the proposed phase in of modified tier breakpoints.

Table 6. Proposed Single Family Residential Tier Breakpoints

	Current	July 1, 2015	July 1, 2016
Tier 1	0 - 2 ccf	0 - 2 ccf	0 - 2 ccf
Tier 2	3 - 10 ccf	3 - 9 ccf	3 - 8 ccf
Tier 3	11 - 25 ccf	10 - 22 ccf	9 - 20 ccf
Tier 4	>25 ccf	>22 ccf	>20 ccf

Table 7 compares single family residential monthly consumption by tier for the current tier breakpoints and the proposed tier breakpoints for July 1, 2016.

Table 7. Single Family Residential Monthly Water Use by Tier: Current vs Proposed Tier Breakpoints



		JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN	TOTAL
Water Use in Tier: Current Tiers														
Tier 1	0 - 2 hcf	14,005	14,025	14,015	13,966	13,968	13,866	13,849	13,836	13,566	13,749	13,891	13,953	166,689
Tier 2	3 - 10 hcf	42,534	42,403	42,139	39,030	39,004	31,742	32,845	29,169	21,215	27,126	34,201	38,559	419,967
Tier 3	11 - 25 hcf	24,896	25,309	23,626	17,071	16,496	7,627	8,390	5,531	2,024	4,156	10,696	17,632	163,454
Tier 4	> 25 hcf	5,291	6,538	4,811	2,588	2,356	785	843	607	205	480	1,382	3,131	29,017
Total		86,726	88,275	84,591	72,655	71,824	54,020	55,927	49,143	37,010	45,511	60,170	73,275	779,127
Water Use in Tier: Revised Tiers														
Tier 1	0 - 2 hcf	14,005	14,025	14,015	13,966	13,968	13,866	13,849	13,836	13,566	13,749	13,891	13,953	166,689
Tier 2	3 - 8 hcf	34,508	34,445	34,301	32,346	32,443	27,688	28,523	25,903	19,631	24,346	29,280	32,032	355,446
Tier 3	9 - 20 hcf	29,051	29,147	27,924	21,514	20,980	10,908	11,859	8,277	3,459	6,584	14,414	21,705	205,822
Tier 4	> 20 hcf	9,162	10,658	8,351	4,829	4,433	1,558	1,696	1,127	354	832	2,585	5,585	51,170
Total		86,726	88,275	84,591	72,655	71,824	54,020	55,927	49,143	37,010	45,511	60,170	73,275	779,127

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 established by Articles 10 and 13D. Together, these Articles establish that rates should both a) discourage waste and encourage conservation of water, and b) 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 an agency's conservation program can reasonably be attributed and recovered via many approaches including from a) both fixed and variable charges, b) 100% from variable charges, c) on a pro-rata basis from all volumetric tiers, or d) from higher volumetric rate tiers. Likewise, 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 and therefore costs that should be recovered from variable rates based on each customer's water use, or c) costs that can be recovered by both fixed and variable rates, a middle-road approach. Furthermore, costs attributable to meeting peak demands can reasonably be allocated a) to all tiers, or b) to the higher tiers in recognition that higher tier water use accounts for a disproportionately higher share of peak demand and is the underlying driver of the need for sizing facilities to meet peak demands.

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 rates developed in this report are designed to achieve the District's policy preferences while complying with the requirements of the California Constitution.

The following table shows a detailed cost recovery allocation supporting the proposed rates for fiscal year 2019/20. Rates in intervening years are phased in from current levels to the proposed levels calculated for 2019/20, in order to help minimize the annual impact due to rate structure modifications occurring in addition to overall rate increases.

- The proposed rates were developed based on reasonable and equitable allocations for cost recovery from the District’s fixed charges and tiered quantity charges. Based on the allocations, fixed monthly charges will recover approximately 25% of total rate revenues and water quantity charges will recover roughly 75% of total rate revenues.
- Costs designated for recovery from the District’s single family residential rate tiers are further allocated for recovery from each rate tier based on the following assumptions:
 - Costs proportionately attributable to all water use are allocated on a pro-rata basis to all water use. This results in each rate tier recovering a pro-rata share of costs based on the percentage of water consumed in each tier. For example, costs for SFPUC Water Purchases, the BAWSCA Bond Surcharge, and Utilities are allocated on a pro-rata basis to each unit of water.
 - The District’s water system facilities are not designed to meet average demands, they are designed based on a number of factors including the need to meet peak demands. For example, water tanks are sized to meet fire flow requirements as well as max day demands. Pipelines also need to be sized to adequately meet both fire flow and max hour demands. Based on input from the District and its engineering consultant, roughly 15% to 25% of District facilities can reasonably be attributed to meeting peak demands. The cost allocations developed in the table assume 20% of facility costs are related to meeting peak demands.
 - Costs related to meeting peak demands are allocated more toward higher tiers in recognition that higher tier water use accounts for a disproportionately higher share of demand during peak use periods and therefore is the underlying driver of the need for sizing facilities to meet peak demands. Costs attributable to peak demands are attributed to 5% of Tier 2 water use, 40% of Tier 3 water use, and 60% of Tier 4 water use. No peak costs are allocated for cost recovery from Tier 1. These allocations are used to recover costs for the District’s Conservation Program and 20% of the District’s Capital Improvement Costs.
 - Many costs – such as costs for operating and maintaining facilities – are incurred providing service to meet both average demands and peak demands. The share of these costs allocated for variable revenue recovery are further allocated on a weighted basis with 80% of the costs allocated pro-rata to all water use and 20% allocated to meeting peak demands, in line with share of facilities required for meeting peak demands.

- The District also receives various revenues that it uses to offset the revenue requirement from rates and thus reduce its rates to levels below the cost of service. Revenues from interest earnings and other customer-related revenues are allocated on a pro-rata basis to reduce the funding requirements from all water use. Revenues from external sources, including property taxes and lease revenues, are allocated 70% to single family residential use and 30% to all other water use, with the share of revenues allocated to single family use applied to offset the funding requirement from the Tier 1 rate. All single family residences benefit from the reduced Tier 1 rate because Tier 1 applies to the first two units of every customer's bill.

The water rates derived on the table provide a cost-nexus supporting the District's proposed water rates.

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 MPWD's costs of providing service, b) the proposed rate structure modifications, and c) the revenue recovery allocations that reasonably and fairly apportion costs to MPWD's rate structure. Rate increases and rate structure modifications are phased in to help minimize the annual impact on customers. Proposed water rates are scheduled to become effective July 1 of each year.

Table 8. Proposed Water Rates

	Current Rates	July 1 2015	July 1 2016	July 1 2017	July 1 2018	July 1 2019
Projected Overall Rate Increase		18.0%	6.0%	6.0%	6.0%	6.0%
Fixed Monthly Charges						
<i>Billed based on meter size</i>						
<u>Meter</u>	<u>Meter Ratio</u>					
5/8"	1.00	\$18.43	\$22.00	\$24.00	\$26.00	\$28.00
1"	1.50	27.65	33.00	36.00	39.00	42.00
1 1/2"	2.50	46.08	55.00	60.00	65.00	70.00
2"	4.00	73.73	88.00	96.00	104.00	112.00
3"	6.00	110.59	132.00	144.00	156.00	168.00
4"	10.00	184.31	220.00	240.00	260.00	280.00
6"	25.00	460.79	550.00	600.00	650.00	700.00
Water Consumption Charges						
<i>Billed based on monthly metered water use (\$/hcf)*</i>						
<u>Residential Use per Tier</u>						
Tier 1	0 - 2 hcf	0 - 2 hcf	0 - 2 hcf	0 - 2 hcf	0 - 2 hcf	0 - 2 hcf
Tier 2	3 - 10 hcf	3 - 9 hcf	3 - 8 hcf	3 - 8 hcf	3 - 8 hcf	3 - 8 hcf
Tier 3	11 - 25 hcf	10 - 22 hcf	9 - 20 hcf	9 - 20 hcf	9 - 20 hcf	9 - 20 hcf
Tier 4	>25 hcf	>22 hcf	>20 hcf	>20 hcf	>20 hcf	>20 hcf
<u>Residential Rate Tiers</u>						
Tier 1		\$4.20	\$5.00	\$5.30	\$5.60	\$5.90
Tier 2		6.46	7.50	7.90	8.30	8.65
Tier 3		7.75	9.00	9.50	10.00	10.50
Tier 4		9.04	10.50	11.10	11.70	12.35
<u>Commercial Rate Tiers</u>						
Tier 1	0 - 5 hcf	\$5.81	\$7.00	\$7.25	\$7.50	\$7.75
Tier 2	Over 5 hcf	6.78	8.00	8.35	8.70	9.10

* 1 hcf = one hundred cubic feet or approximately 748 gallons.

7.2 Water Rate Impacts

Table 9 shows the impacts of the proposed water rates on a single family residential customer with a 5/8-inch meter at a range of levels of water use. Customers can mitigate the impact of rate increases by reducing 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.

Table 9. Single Family Residential Bill Impacts

Monthly Use (hcf)	% of Bills in Block	% of Bills at or Below	Monthly Water Bills						5-Year Impact
			Current	2015/16	2016/17	2017/18	2018/19	2019/20	
0	1.1%	1.1%	\$18.43	\$22.00	\$24.00	\$26.00	\$28.00	\$30.00	\$11.57
1	2.8%	3.9%	22.63	27.00	29.30	31.60	33.90	36.25	13.62
2	5.1%	9.1%	26.83	32.00	34.60	37.20	39.80	42.50	15.67
3	7.5%	16.5%	33.29	39.50	42.50	45.50	48.45	51.50	18.21
4	9.4%	26.0%	39.75	47.00	50.40	53.80	57.10	60.50	20.75
5	9.9%	35.8%	46.21	54.50	58.30	62.10	65.75	69.50	23.29
6	9.0%	44.9%	52.67	62.00	66.20	70.40	74.40	78.50	25.83
7	7.7%	52.6%	59.13	69.50	74.10	78.70	83.05	87.50	28.37
8	6.9%	59.5%	65.59	77.00	82.00	87.00	91.70	96.50	30.91
9	5.8%	65.3%	72.05	84.50	91.50	97.00	102.20	107.50	35.45
10	5.0%	70.2%	78.51	93.50	101.00	107.00	112.70	118.50	39.99
11	4.3%	74.5%	86.26	102.50	110.50	117.00	123.20	129.50	43.24
12	3.7%	78.2%	94.01	111.50	120.00	127.00	133.70	140.50	46.49
13	3.1%	81.3%	101.76	120.50	129.50	137.00	144.20	151.50	49.74
14	2.7%	84.0%	109.51	129.50	139.00	147.00	154.70	162.50	52.99
15	2.2%	86.2%	117.26	138.50	148.50	157.00	165.20	173.50	56.24
16	1.9%	88.1%	125.01	147.50	158.00	167.00	175.70	184.50	59.49
17	1.6%	89.6%	132.76	156.50	167.50	177.00	186.20	195.50	62.74
18	1.3%	91.0%	140.51	165.50	177.00	187.00	196.70	206.50	65.99
19	1.2%	92.2%	148.26	174.50	186.50	197.00	207.20	217.50	69.24
20	1.1%	93.3%	156.01	183.50	196.00	207.00	217.70	228.50	72.49
21	0.9%	94.2%	163.76	192.50	207.10	218.70	230.05	241.50	77.74
22	0.7%	94.9%	171.51	201.50	218.20	230.40	242.40	254.50	82.99
23	0.7%	95.6%	179.26	212.00	229.30	242.10	254.75	267.50	88.24
24	0.6%	96.2%	187.01	222.50	240.40	253.80	267.10	280.50	93.49
25	0.4%	96.6%	194.76	233.00	251.50	265.50	279.45	293.50	98.74
26	0.4%	97.1%	203.80	243.50	262.60	277.20	291.80	306.50	102.70
27	0.4%	97.4%	212.84	254.00	273.70	288.90	304.15	319.50	106.66
28	0.3%	97.8%	221.88	264.50	284.80	300.60	316.50	332.50	110.62
29	0.2%	98.0%	230.92	275.00	295.90	312.30	328.85	345.50	114.58
30	0.2%	98.2%	239.96	285.50	307.00	324.00	341.20	358.50	118.54
50	31-50: 1.5%	99.7%	420.76	495.50	529.00	558.00	588.20	618.50	197.74
75	>50: 0.3%	100.0%	646.76	758.00	806.50	850.50	896.95	943.50	296.74

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 Proposition 218 process to implement a pass-through. However, agencies must send ratepayers a notice informing them of the pass-through 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. In practice, this means that MPWD can adopt a rate schedule that allows it to directly “pass-through” changes in the SFPUC’s wholesale water rate and BAWSCA surcharge without initiating a new Proposition 218 notification process and hearing.

The proposed rates assume that the SFPUC will increase its wholesale water rates on July 1 each year from the current level of \$2.93 per hcf to \$3.75 in 2015, \$3.78 in 2016, \$3.79 in 2017, \$4.31 in 2018, and \$4.72 per hcf in 2019. Pursuant to California Government Code 53756, MPWD should retain authority to pass-through any additional increases in SFPUC wholesale water rates above these projected SFPUC rates each year. Future pass-throughs can be implemented by increasing the District’s proposed Water Consumption Charges by exact amount of the increase in cents per hcf in excess of the projected SFPUC wholesale rates. For example, if the SFPUC raises its wholesale water rate to \$4.51 per hcf on July 1, 2018, the District would be authorized to increase its Water Consumption Charges by an additional \$0.20 per hcf on or after July 1, 2018. Prior to initiating a pass-through for future SFPUC wholesale rates, the MPWD will need to send notification of such increases to all customers at least 30 days prior to implementation.

8 WATER SHORTAGE EMERGENCY RATES

8.1 Water Shortage Emergency Rate Overview

California is experiencing one of the most serious droughts on record. On April 1, 2015 the Governor issued an Executive Order directing the State Water Resources Control Board (SWRCB) to implement mandatory water conservation regulations to reduce water usage by 25% statewide. To achieve these savings, the SWRCB is expediting emergency regulations to set water conservation targets for communities around the State. Agencies that fail to achieve the required reductions could be subject to penalties of up to \$10,000 per day. Based on the State's draft proposal, MPWD would be required to reduce water demand by 20% from demand in calendar year 2013. Thanks to conservation efforts by the District's customers, MPWD is already more than half-way toward meeting the State's proposed 20% cutback target for the District due to customer conservation efforts to date.

During times of drought and water shortages, water agencies need to both: 1) reduce water demand, and 2) maintain adequate revenues to fund operations despite reduced water sales. In order to help MPWD recover its costs of service and remain financially stable during droughts and periods of reduced water sales, BWA recommends the District adopt Water Shortage Emergency Rates. These emergency rates would be implemented in response to escalating drought conditions and water supply shortages, or in response to additional State-mandated cutbacks in water use in excess of 20%.

8.2 Proposed Water Shortage Emergency Rates

BWA developed Water Shortage Emergency Rates corresponding with water demand cutback targets ranging from 25% to 50% for each of the next five fiscal years. The District can implement the emergency rates during periods of declared water shortage emergencies pursuant to Water Code Section 350 and/or Water Code Section 31026. During such periods, the District can phase in and phase out emergency rates to ensure financial stability in response to necessary cutbacks and/or anticipated reductions in water demand. These emergency rates would temporarily replace MPWD's regular Water Consumption Charges until water supplies and sales returned to normal. Prior to initiating Water Shortage Emergency Rates, MPWD will send notification to all customers at least 30 days prior to implementation.

Table 10 shows proposed Water Shortage Emergency Rates for each of the next five years corresponding with cutback targets ranging from 25% to 50% of demand. Tables showing calculations of these emergency rates are included in Appendix B. The cutback levels are targeted from baseline water demand of 1,387,000 hcf based on actual water demand in 2013, in line with the calendar year identified by the State as the baseline year for measuring compliance with the State's water reduction targets.

The proposed emergency rates assume higher levels of cutback in higher tiers and increased funding for the District's conservation program that range from \$50,000 for a 30% cutback target to \$250,000 to help achieve the maximum 50% cutback target. The proposed emergency rates also account for a corresponding decrease in SFPUC wholesale water purchases as a result reduced water supply needs during periods of reduced water sales. The proposed Water Shortage Emergency Rates are based on the required percentage rate increases under different cutback levels, applied to each of the District's rate tiers excluding Tier 1 residential rates, which would not be impacted due to the implementation of the emergency rates.

Table 10. Proposed Water Shortage Emergency Rates

	Water Shortage Cutback Targets (from 2013 Usage)					
Water Supply Reduction %	25%	30%	35%	40%	45%	50%
Water Shortage Emergency Rates 2015/16						
Required Rate Increase	4.7%	10.2%	15.6%	21.1%	26.5%	32.0%
<u>Single Family Residential</u>						
Tier 1	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Tier 2	7.85	8.26	8.67	9.08	9.49	9.90
Tier 3	9.43	9.92	10.41	10.90	11.39	11.88
Tier 4	11.00	11.57	12.14	12.71	13.29	13.86
<u>All Other</u>						
Tier 1	\$7.33	\$7.71	\$8.09	\$8.48	\$8.86	\$9.24
Tier 2	8.38	8.81	9.25	9.69	10.12	10.56
Water Shortage Emergency Rates 2016/17						
Required Rate Increase	4.3%	10.2%	16.1%	22.0%	27.9%	33.8%
<u>Single Family Residential</u>						
Tier 1	\$5.30	\$5.30	\$5.30	\$5.30	\$5.30	\$5.30
Tier 2	8.24	8.71	9.17	9.64	10.10	10.57
Tier 3	9.91	10.47	11.03	11.59	12.15	12.71
Tier 4	11.58	12.23	12.89	13.54	14.20	14.85
<u>All Other</u>						
Tier 1	\$7.56	\$7.99	\$8.42	\$8.84	\$9.27	\$9.70
Tier 2	8.71	9.20	9.70	10.19	10.68	11.17
Water Shortage Emergency Rates 2017/18						
Required Rate Increase	3.7%	9.8%	15.9%	22.1%	28.2%	34.3%
<u>Single Family Residential</u>						
Tier 1	\$5.60	\$5.60	\$5.60	\$5.60	\$5.60	\$5.60
Tier 2	8.61	9.11	9.62	10.13	10.64	11.15
Tier 3	10.37	10.98	11.59	12.21	12.82	13.43
Tier 4	12.13	12.85	13.56	14.28	15.00	15.72
<u>All Other</u>						
Tier 1	\$7.78	\$8.24	\$8.70	\$9.15	\$9.61	\$10.07
Tier 2	9.02	9.55	10.09	10.62	11.15	11.69
Water Shortage Emergency Rates 2018/19						
Required Rate Increase	3.3%	9.7%	16.2%	22.6%	29.1%	35.5%
<u>Single Family Residential</u>						
Tier 1	\$5.90	\$5.90	\$5.90	\$5.90	\$5.90	\$5.90
Tier 2	8.93	9.49	10.05	10.61	11.16	11.72
Tier 3	10.84	11.52	12.20	12.87	13.55	14.23
Tier 4	12.75	13.55	14.35	15.14	15.94	16.74
<u>All Other</u>						
Tier 1	\$8.00	\$8.50	\$9.00	\$9.50	\$10.00	\$10.50
Tier 2	9.40	9.98	10.57	11.16	11.74	12.33
Water Shortage Emergency Rates 2019/20						
Required Rate Increase	2.3%	8.8%	15.3%	21.8%	28.3%	34.8%
<u>Single Family Residential</u>						
Tier 1	\$6.25	\$6.25	\$6.25	\$6.25	\$6.25	\$6.25
Tier 2	9.20	9.79	10.38	10.96	11.55	12.14
Tier 3	11.25	11.97	12.68	13.40	14.12	14.83
Tier 4	13.29	14.14	14.99	15.84	16.68	17.53
<u>All Other</u>						
Tier 1	\$8.18	\$8.70	\$9.22	\$9.75	\$10.27	\$10.79
Tier 2	9.72	10.33	10.95	11.57	12.19	12.81

APPENDIX A

Additional Water Rate Study Tables

Table A-1
 Mid-Peninsula Water District
 Historical Accounts & Use by Customer Class

	2011/12	2012/13	2013/14
Customer Accounts			
Residential	7,130	7,130	7,130
Apartments	204	204	204
Commercial	477	477	477
Other Public Authority	<u>97</u>	<u>97</u>	<u>97</u>
Total	7,908	7,908	7,908
Billed Usage (hcf)			
Residential	780,865	782,008	779,127
Apartments	235,146	223,687	214,216
Commercial	214,260	220,104	218,774
Other Public Authority	<u>82,469</u>	<u>86,613</u>	<u>83,953</u>
Total	1,312,740	1,312,412	1,296,070
Annual Change		0.0%	-1.2%
Average Monthly Use per Account			
Residential	9.1	9.1	9.1
Apartments	96.1	91.4	87.5
Commercial	37.4	38.5	38.2
Other Public Authority	<u>70.8</u>	<u>74.4</u>	<u>72.1</u>
Total	13.8	13.8	13.7

Source: Mid-Peninsula Water District Rate Info 8-8-2014

Table A-2
 Mid-Peninsula Water District
 Billed Usage & Revenues

	FY 2013		FY 2014		FY 2015 Projected	
	hcf	%	hcf	%	hcf	%
SINGLE FAMILY RESIDENTIAL						
Residential						
Tier 1 0 to 2	166,620	21%	166,994	21%	166,000	25.4%
Tier 2 3 to 10	417,675	53%	420,112	54%	360,000	55.1%
Tier 3 11 to 25	166,426	21%	163,247	21%	110,000	16.8%
Tier 4 26 and over	<u>31,287</u>	<u>4%</u>	<u>28,774</u>	<u>4%</u>	<u>17,000</u>	<u>2.6%</u>
Subtotal	782,008	100%	779,127	100%	653,000	100%
Change from prior year			-0.4%		-16.2%	
Charges at Current Rates	\$4,970,620		\$4,940,580		\$4,028,980	
Change from prior year			-0.6%		-18.5%	
ALL OTHER						
All Other						
Tier 1 0 to 5	38,419	7%	39,299	7%	38,000	7%
Tier 2 6 and Over	<u>526,464</u>	<u>93%</u>	<u>514,413</u>	<u>93%</u>	<u>470,000</u>	<u>93%</u>
Subtotal	564,883	100%	553,712	100%	508,000	100%
Change from prior year			-2.0%		-8.3%	
Charges at Current Rates	\$3,792,640		\$3,716,047		\$3,407,380	
Change from prior year			-2.0%		45.9%	
TOTAL USE & REVENUES						
Total Use	1,346,891		1,332,839		1,161,000	
Change from prior year			-1.0%		-12.9%	
Charges at Current Rates	\$8,763,261		\$8,656,627		\$7,436,360	
Less 1%	\$8,675,628		\$8,570,061		\$7,361,996	
Change from prior year			-1.2%		-14.1%	
Charges at Prior Rates	\$7,379,155		\$7,942,814			
Less 1.25%	\$7,305,363		\$7,863,386	7.6%		

Table A-3
 Mid-Peninsula Water District
 Single Family Residential Consumption Block Analysis FY2014

Median Monthly Use: 7.0 hcf
 Avg Monthly Use for Annual Median: 8.0 hcf
 Average Monthly Use: 9.1 hcf

Monthly Use (hcf)	Number of Bills				Water Use (hcf)		Use Through Break	
	In Block	% of Total	Cumulative	Cumulative %	In Block	% of Ttl	Use (hcf)	% of Ttl
0	964	1.1%	964	1.1%	0	0.0%	0	0.0%
1	2,414	2.8%	3,378	3.9%	2,414	0.3%	84,704	10.9%
2	4,380	5.1%	7,758	9.1%	8,760	1.1%	166,994	21.4%
3	6,406	7.5%	14,164	16.5%	19,218	2.5%	244,904	31.4%
4	8,076	9.4%	22,240	26.0%	32,304	4.1%	316,408	40.6%
5	8,471	9.9%	30,711	35.8%	42,355	5.4%	379,836	48.8%
6	7,744	9.0%	38,455	44.9%	46,464	6.0%	434,793	55.8%
7	6,606	7.7%	45,061	52.6%	46,242	5.9%	482,006	61.9%
8	5,882	6.9%	50,943	59.5%	47,056	6.0%	522,613	67.1%
9	4,957	5.8%	55,900	65.3%	44,613	5.7%	557,338	71.5%
10	4,256	5.0%	60,156	70.2%	42,560	5.5%	587,106	75.4%
11	3,652	4.3%	63,808	74.5%	40,172	5.2%	612,618	78.6%
12	3,155	3.7%	66,963	78.2%	37,860	4.9%	634,478	81.4%
13	2,697	3.1%	69,660	81.3%	35,061	4.5%	653,183	83.8%
14	2,295	2.7%	71,955	84.0%	32,130	4.1%	669,191	85.9%
15	1,867	2.2%	73,822	86.2%	28,005	3.6%	682,904	87.6%
16	1,618	1.9%	75,440	88.1%	25,888	3.3%	694,750	89.2%
17	1,349	1.6%	76,789	89.6%	22,933	2.9%	704,978	90.5%
18	1,144	1.3%	77,933	91.0%	20,592	2.6%	713,857	91.6%
19	1,061	1.2%	78,994	92.2%	20,159	2.6%	721,592	92.6%
20	922	1.1%	79,916	93.3%	18,440	2.4%	728,266	93.5%
21	789	0.9%	80,705	94.2%	16,569	2.1%	734,018	94.2%
22	611	0.7%	81,316	94.9%	13,442	1.7%	738,981	94.8%
23	594	0.7%	81,910	95.6%	13,662	1.8%	743,333	95.4%
24	496	0.6%	82,406	96.2%	11,904	1.5%	747,091	95.9%
25	367	0.4%	82,773	96.6%	9,175	1.2%	750,353	96.3%
26	374	0.4%	83,147	97.1%	9,724	1.2%	753,248	96.7%
27	320	0.4%	83,467	97.4%	8,640	1.1%	755,769	97.0%
28	295	0.3%	83,762	97.8%	8,260	1.1%	757,970	97.3%
29	212	0.2%	83,974	98.0%	6,148	0.8%	759,876	97.5%
30	191	0.2%	84,165	98.2%	5,730	0.7%	761,570	97.7%
31	170	0.2%	84,335	98.4%	5,270	0.7%	763,073	97.9%
32	148	0.2%	84,483	98.6%	4,736	0.6%	764,406	98.1%
33	138	0.2%	84,621	98.8%	4,554	0.6%	765,591	98.3%
34	119	0.1%	84,740	98.9%	4,046	0.5%	766,638	98.4%
35	90	0.1%	84,830	99.0%	3,150	0.4%	767,566	98.5%
36	74	0.1%	84,904	99.1%	2,664	0.3%	768,404	98.6%
37	76	0.1%	84,980	99.2%	2,812	0.4%	769,168	98.7%
38	62	0.1%	85,042	99.3%	2,356	0.3%	769,856	98.8%
39	52	0.1%	85,094	99.3%	2,028	0.3%	770,482	98.9%
40	58	0.1%	85,152	99.4%	2,320	0.3%	771,056	99.0%
41	50	0.1%	85,202	99.5%	2,050	0.3%	771,572	99.0%
42	48	0.1%	85,250	99.5%	2,016	0.3%	772,038	99.1%
43	36	0.0%	85,286	99.6%	1,548	0.2%	772,456	99.1%
44	31	0.0%	85,317	99.6%	1,364	0.2%	772,838	99.2%
45	23	0.0%	85,340	99.6%	1,035	0.1%	773,189	99.2%
46	22	0.0%	85,362	99.6%	1,012	0.1%	773,517	99.3%
47	19	0.0%	85,381	99.7%	893	0.1%	773,823	99.3%
48	20	0.0%	85,401	99.7%	960	0.1%	774,110	99.4%
49	10	0.0%	85,411	99.7%	490	0.1%	774,377	99.4%
50	21	0.0%	85,432	99.7%	1,050	0.1%	774,634	99.4%
51-75	195	0.2%	85,627	100.0%	11,534	1.5%	777,443	99.8%
76-100	23	0.0%	85,650	100.0%	1,987	0.3%	778,155	99.9%
101+	18	0.0%	85,668	100.0%	2,772	0.4%	779,127	100.0%
Total	85,668	100.0%			779,127	100.0%		

APPENDIX B

Water Shortage Emergency Rate Tables

Table B-1
 Mid-Peninsula Water District
 Water Shortage Emergency Rate Summary

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

	Water Shortage Cutback Targets (from 2013 Usage)					
Water Supply Reduction %	25%	30%	35%	40%	45%	50%
Water Shortage Emergency Rates 2015/16						
Required Rate Increase	4.7%	10.2%	15.6%	21.1%	26.5%	32.0%
<u>Single Family Residential</u>						
Tier 1	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Tier 2	7.85	8.26	8.67	9.08	9.49	9.90
Tier 3	9.43	9.92	10.41	10.90	11.39	11.88
Tier 4	11.00	11.57	12.14	12.71	13.29	13.86
<u>All Other</u>						
Tier 1	\$7.33	\$7.71	\$8.09	\$8.48	\$8.86	\$9.24
Tier 2	8.38	8.81	9.25	9.69	10.12	10.56
Water Shortage Emergency Rates 2016/17						
Required Rate Increase	4.3%	10.2%	16.1%	22.0%	27.9%	33.8%
<u>Single Family Residential</u>						
Tier 1	\$5.30	\$5.30	\$5.30	\$5.30	\$5.30	\$5.30
Tier 2	8.24	8.71	9.17	9.64	10.10	10.57
Tier 3	9.91	10.47	11.03	11.59	12.15	12.71
Tier 4	11.58	12.23	12.89	13.54	14.20	14.85
<u>All Other</u>						
Tier 1	\$7.56	\$7.99	\$8.42	\$8.84	\$9.27	\$9.70
Tier 2	8.71	9.20	9.70	10.19	10.68	11.17
Water Shortage Emergency Rates 2017/18						
Required Rate Increase	3.7%	9.8%	15.9%	22.1%	28.2%	34.3%
<u>Single Family Residential</u>						
Tier 1	\$5.60	\$5.60	\$5.60	\$5.60	\$5.60	\$5.60
Tier 2	8.61	9.11	9.62	10.13	10.64	11.15
Tier 3	10.37	10.98	11.59	12.21	12.82	13.43
Tier 4	12.13	12.85	13.56	14.28	15.00	15.72
<u>All Other</u>						
Tier 1	\$7.78	\$8.24	\$8.70	\$9.15	\$9.61	\$10.07
Tier 2	9.02	9.55	10.09	10.62	11.15	11.69
Water Shortage Emergency Rates 2018/19						
Required Rate Increase	3.3%	9.7%	16.2%	22.6%	29.1%	35.5%
<u>Single Family Residential</u>						
Tier 1	\$5.90	\$5.90	\$5.90	\$5.90	\$5.90	\$5.90
Tier 2	8.93	9.49	10.05	10.61	11.16	11.72
Tier 3	10.84	11.52	12.20	12.87	13.55	14.23
Tier 4	12.75	13.55	14.35	15.14	15.94	16.74
<u>All Other</u>						
Tier 1	\$8.00	\$8.50	\$9.00	\$9.50	\$10.00	\$10.50
Tier 2	9.40	9.98	10.57	11.16	11.74	12.33
Water Shortage Emergency Rates 2019/20						
Required Rate Increase	2.3%	8.8%	15.3%	21.8%	28.3%	34.8%
<u>Single Family Residential</u>						
Tier 1	\$6.25	\$6.25	\$6.25	\$6.25	\$6.25	\$6.25
Tier 2	9.20	9.79	10.38	10.96	11.55	12.14
Tier 3	11.25	11.97	12.68	13.40	14.12	14.83
Tier 4	13.29	14.14	14.99	15.84	16.68	17.53
<u>All Other</u>						
Tier 1	\$8.18	\$8.70	\$9.22	\$9.75	\$10.27	\$10.79
Tier 2	9.72	10.33	10.95	11.57	12.19	12.81

Table B-2
 Mid-Peninsula Water District
 Water Shortage Emergency Rates 2015/16

2015/16

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

		Water Shortage Cutback Targets 2015/16						
Water Supply Reduction %	2013 Baseline*	25%	30%	35%	40%	45%	50%	
Cutback Built into Rate Projections		20.0%	20.0%	20.0%	20.0%	20.0%	20.0%	
Additional Cutback Over Projected Demand		6.2%	12.5%	18.7%	25.0%	31.2%	37.5%	
Water Sales Cutback								
<u>Single Family Residential</u>	Cutback Multiplier							
Tier 1 0 - 2 hcf	20%	225,660	2,797	5,619	8,441	11,264	14,086	16,908
Tier 2 3 - 9 hcf	135%	449,960	37,642	75,629	113,616	151,603	189,590	227,577
Tier 3 10 - 22 hcf	165%	174,000	17,791	35,745	53,699	71,653	89,607	107,561
Tier 4 26 hcf & above	200%	38,060	4,717	9,477	14,237	18,998	23,758	28,518
<u>All Other</u>								
Tier 1 0 - 5 hcf	50%	38,000	1,177	2,366	3,554	4,742	5,930	7,118
Tier 2 6 hcf & above	80%	461,320	22,870	45,949	69,028	92,107	115,186	138,265
Total		1,387,000	86,994	174,784	262,575	350,366	438,156	525,947
% Reduction			6.3%	12.6%	18.9%	25.3%	31.6%	37.9%
Projected Rates								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$5.00	\$5.00	\$5.00	\$5.00	\$5.00	\$5.00
Tier 2 3 - 9 hcf			7.50	7.50	7.50	7.50	7.50	7.50
Tier 3 10 - 22 hcf			9.00	9.00	9.00	9.00	9.00	9.00
Tier 4 26 hcf & above			10.50	10.50	10.50	10.50	10.50	10.50
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$7.00	\$7.00	\$7.00	\$7.00	\$7.00	\$7.00
Tier 2 6 hcf & above			8.00	8.00	8.00	8.00	8.00	8.00
Projected Revenue Loss								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$13,984	\$28,095	\$42,207	\$56,319	\$70,431	\$84,542
Tier 2 3 - 9 hcf			282,316	567,218	852,120	1,137,022	1,421,924	1,706,825
Tier 3 10 - 22 hcf			160,119	321,704	483,289	644,875	806,460	968,046
Tier 4 26 hcf & above			49,528	99,510	149,493	199,475	249,457	299,439
Subtotal			505,946	1,016,528	1,527,109	2,037,690	2,548,271	3,058,853
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$8,242	\$16,559	\$24,876	\$33,193	\$41,511	\$49,828
Tier 2 6 hcf & above			182,957	367,589	552,222	736,855	921,488	1,106,120
Subtotal			191,198	384,148	577,098	770,048	962,998	1,155,948
Total			\$697,145	\$1,400,676	\$2,104,207	\$2,807,738	\$3,511,270	\$4,214,801
Less Reduced SFPUC Purchases			93,083	187,019	280,955	374,891	468,827	562,763
SFPUC Wholesale Rate			\$3.75	\$3.75	\$3.75	\$3.75	\$3.75	\$3.75
Subtotal			(349,062)	(\$701,323)	(\$1,053,583)	(\$1,405,843)	(\$1,758,103)	(\$2,110,363)
Plus Add'l Conservation Program Costs			\$0	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Net Revenue Requirement			\$348,082	\$749,353	\$1,150,625	\$1,551,896	\$1,953,167	\$2,354,438
Required Rate Increase (Excluding Tier 1 Residential)			4.7%	10.2%	15.6%	21.1%	26.5%	32.0%

* Based on total water purchases of 1,484,092, which includes estimated sales of 1,387,000 plus 7% unbilled water.

Table B-3
 Mid-Peninsula Water District
 Water Shortage Emergency Rates 2016/17

2016/17

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

		Water Shortage Cutback Targets 2016/17						
Water Supply Reduction %	2013 Baseline*	25%	30%	35%	40%	45%	50%	
Cutback Built into Rate Projections		20.9%	20.9%	20.9%	20.9%	20.9%	20.9%	
Additional Cutback Over Projected Demand		5.2%	11.5%	17.9%	24.2%	30.5%	36.8%	
Water Sales Cutback								
<u>Single Family Residential</u>	Cutback Multiplier							
Tier 1 0 - 2 hcf	20%	225,660	2,361	5,212	8,063	10,915	13,766	16,618
Tier 2 3 - 8 hcf	135%	403,740	28,508	62,944	97,380	131,816	166,252	200,688
Tier 3 9 - 20 hcf	165%	205,950	17,774	39,243	60,713	82,183	103,652	125,122
Tier 4 26 hcf & above	200%	52,340	5,475	12,089	18,702	25,316	31,930	38,543
<u>All Other</u>								
Tier 1 0 - 5 hcf	50%	38,000	994	2,194	3,395	4,595	5,795	6,996
Tier 2 6 hcf & above	80%	461,320	19,303	42,620	65,937	89,254	112,571	135,887
Total		1,387,000	74,415	164,303	254,191	344,079	433,967	523,855
% Reduction			5.4%	11.8%	18.3%	24.8%	31.3%	37.8%
Projected Rates								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$5.30	\$5.30	\$5.30	\$5.30	\$5.30	\$5.30
Tier 2 3 - 8 hcf			7.90	7.90	7.90	7.90	7.90	7.90
Tier 3 9 - 20 hcf			9.50	9.50	9.50	9.50	9.50	9.50
Tier 4 26 hcf & above			11.10	11.10	11.10	11.10	11.10	11.10
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$7.25	\$7.25	\$7.25	\$7.25	\$7.25	\$7.25
Tier 2 6 hcf & above			8.35	8.35	8.35	8.35	8.35	8.35
Projected Revenue Loss								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$12,511	\$27,624	\$42,736	\$57,849	\$72,961	\$88,074
Tier 2 3 - 8 hcf			225,215	497,260	769,305	1,041,349	1,313,394	1,585,439
Tier 3 9 - 20 hcf			168,851	372,812	576,773	780,734	984,695	1,188,656
Tier 4 26 hcf & above			60,774	134,186	207,598	281,009	354,421	427,832
Subtotal			467,352	1,031,882	1,596,412	2,160,941	2,725,471	3,290,001
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$7,205	\$15,908	\$24,611	\$33,314	\$42,017	\$50,720
Tier 2 6 hcf & above			161,181	355,877	550,572	745,268	939,964	1,134,660
Subtotal			168,386	371,784	575,183	778,582	981,981	1,185,380
Total			\$635,737	\$1,403,666	\$2,171,595	\$2,939,524	\$3,707,452	\$4,475,381
Less Reduced SFPUC Purchases			79,624	175,804	271,984	368,164	464,344	560,524
SFPUC Wholesale Rate			\$3.78	\$3.78	\$3.78	\$3.78	\$3.78	\$3.78
Subtotal			(300,977)	(\$664,538)	(\$1,028,099)	(\$1,391,660)	(\$1,755,221)	(\$2,118,782)
Plus Add'l Conservation Program Costs			\$0	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Net Revenue Requirement			\$334,760	\$789,128	\$1,243,495	\$1,697,863	\$2,152,231	\$2,606,599
Required Rate Increase (Excluding Tier 1 Residential)			4.3%	10.2%	16.1%	22.0%	27.9%	33.8%

* Based on total water purchases of 1,484,092, which includes estimated sales of 1,387,000 plus 7% unbilled water.

Table B-4
 Mid-Peninsula Water District
 Water Shortage Emergency Rates 2017/18

2017/18

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

		Water Shortage Cutback Targets 2017/18						
Water Supply Reduction %	2013 Baseline*	25%	30%	35%	40%	45%	50%	
Cutback Built into Rate Projections		21.7%	21.7%	21.7%	21.7%	21.7%	21.7%	
Additional Cutback Over Projected Demand		4.3%	10.6%	17.0%	23.4%	29.8%	36.2%	
Water Sales Cutback								
<u>Single Family Residential</u>	Cutback Multiplier							
Tier 1 0 - 2 hcf	20%	225,660	1,923	4,803	7,684	10,565	13,445	16,326
Tier 2 3 - 8 hcf	135%	403,740	23,221	58,010	92,798	127,587	162,375	197,164
Tier 3 9 - 20 hcf	165%	205,950	14,477	36,167	57,856	79,545	101,235	122,924
Tier 4 26 hcf & above	200%	52,340	4,460	11,141	17,822	24,504	31,185	37,866
<u>All Other</u>								
Tier 1 0 - 5 hcf	50%	38,000	809	2,022	3,235	4,448	5,660	6,873
Tier 2 6 hcf & above	80%	461,320	15,723	39,279	62,834	86,390	109,945	133,501
Total		1,387,000	60,614	151,422	242,230	333,038	423,846	514,654
% Reduction			4.4%	10.9%	17.5%	24.0%	30.6%	37.1%
Projected Rates								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$5.60	\$5.60	\$5.60	\$5.60	\$5.60	\$5.60
Tier 2 3 - 8 hcf			8.30	8.30	8.30	8.30	8.30	8.30
Tier 3 9 - 20 hcf			10.00	10.00	10.00	10.00	10.00	10.00
Tier 4 26 hcf & above			11.70	11.70	11.70	11.70	11.70	11.70
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$7.50	\$7.50	\$7.50	\$7.50	\$7.50	\$7.50
Tier 2 6 hcf & above			8.70	8.70	8.70	8.70	8.70	8.70
Projected Revenue Loss								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$10,768	\$26,899	\$43,030	\$59,162	\$75,293	\$91,425
Tier 2 3 - 8 hcf			192,735	481,480	770,224	1,058,969	1,347,714	1,636,459
Tier 3 9 - 20 hcf			144,775	361,668	578,561	795,455	1,012,348	1,229,241
Tier 4 26 hcf & above			<u>52,179</u>	<u>130,351</u>	<u>208,523</u>	<u>286,694</u>	<u>364,866</u>	<u>443,038</u>
Subtotal			400,456	1,000,398	1,600,339	2,200,280	2,800,222	3,400,163
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$6,071	\$15,166	\$24,262	\$33,357	\$42,452	\$51,547
Tier 2 6 hcf & above			<u>136,791</u>	<u>341,724</u>	<u>546,657</u>	<u>751,590</u>	<u>956,523</u>	<u>1,161,457</u>
Subtotal			142,862	356,891	570,919	784,947	998,976	1,213,004
Total			\$543,319	\$1,357,288	\$2,171,258	\$2,985,228	\$3,799,197	\$4,613,167
Less Reduced SFPUC Purchases			64,857	162,021	259,186	356,350	453,515	550,680
SFPUC Wholesale Rate			<u>\$3.79</u>	<u>\$3.79</u>	<u>\$3.79</u>	<u>\$3.79</u>	<u>\$3.79</u>	<u>\$3.79</u>
Subtotal			(245,807)	(\$614,061)	(\$982,314)	(\$1,350,568)	(\$1,718,822)	(\$2,087,076)
Plus Add'l Conservation Program Costs			\$0	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Net Revenue Requirement			\$297,512	\$793,228	\$1,288,943	\$1,784,659	\$2,280,375	\$2,776,091
Required Rate Increase (Excluding Tier 1 Residential)			3.7%	9.8%	15.9%	22.1%	28.2%	34.3%

* Based on total water purchases of 1,484,092, which includes estimated sales of 1,387,000 plus 7% unbilled water.

Table B-5
 Mid-Peninsula Water District
 Water Shortage Emergency Rates 2018/19

2018/19

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

		Water Shortage Cutback Targets 2018/19						
Water Supply Reduction %	2013 Baseline*	25%	30%	35%	40%	45%	50%	
Cutback Built into Rate Projections		22.5%	22.5%	22.5%	22.5%	22.5%	22.5%	
Additional Cutback Over Projected Demand		3.3%	9.7%	16.2%	22.6%	29.1%	35.5%	
Water Sales Cutback								
<u>Single Family Residential</u>	Cutback Multiplier							
Tier 1 0 - 2 hcf	20%	225,660	1,476	4,386	7,297	10,207	13,118	16,028
Tier 2 3 - 8 hcf	135%	403,740	17,825	52,973	88,121	123,269	158,418	193,566
Tier 3 9 - 20 hcf	165%	205,950	11,113	33,027	54,940	76,854	98,767	120,681
Tier 4 26 hcf & above	200%	52,340	3,423	10,174	16,924	23,675	30,425	37,176
<u>All Other</u>								
Tier 1 0 - 5 hcf	50%	38,000	621	1,847	3,072	4,297	5,522	6,748
Tier 2 6 hcf & above	80%	461,320	12,069	35,868	59,667	83,467	107,266	131,065
Total		1,387,000	46,527	138,274	230,022	321,769	413,516	505,263
% Reduction			3.4%	10.0%	16.6%	23.2%	29.8%	36.4%
Projected Rates								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$5.90	\$5.90	\$5.90	\$5.90	\$5.90	\$5.90
Tier 2 3 - 8 hcf			8.65	8.65	8.65	8.65	8.65	8.65
Tier 3 9 - 20 hcf			10.50	10.50	10.50	10.50	10.50	10.50
Tier 4 26 hcf & above			12.35	12.35	12.35	12.35	12.35	12.35
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$7.75	\$7.75	\$7.75	\$7.75	\$7.75	\$7.75
Tier 2 6 hcf & above			9.10	9.10	9.10	9.10	9.10	9.10
Projected Revenue Loss								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$8,708	\$25,879	\$43,051	\$60,222	\$77,394	\$94,565
Tier 2 3 - 8 hcf			154,183	458,215	762,248	1,066,281	1,370,314	1,674,346
Tier 3 9 - 20 hcf			116,686	346,779	576,872	806,966	1,037,059	1,267,152
Tier 4 26 hcf & above			<u>42,278</u>	<u>125,646</u>	<u>209,014</u>	<u>292,382</u>	<u>375,750</u>	<u>459,118</u>
Subtotal			321,855	956,520	1,591,185	2,225,851	2,860,516	3,495,181
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$4,815	\$14,311	\$23,807	\$33,302	\$42,798	\$52,294
Tier 2 6 hcf & above			<u>109,829</u>	<u>326,401</u>	<u>542,973</u>	<u>759,545</u>	<u>976,117</u>	<u>1,192,689</u>
Subtotal			114,645	340,712	566,780	792,848	1,018,915	1,244,983
Total			\$436,499	\$1,297,232	\$2,157,965	\$3,018,698	\$3,879,431	\$4,740,164
Less Reduced SFPUC Purchases			49,784	147,954	246,123	344,293	442,462	540,631
SFPUC Wholesale Rate			<u>\$4.31</u>	<u>\$4.31</u>	<u>\$4.31</u>	<u>\$4.31</u>	<u>\$4.31</u>	<u>\$4.31</u>
Subtotal			(214,570)	(\$637,680)	(\$1,060,790)	(\$1,483,901)	(\$1,907,011)	(\$2,330,121)
Plus Add'l Conservation Program Costs			\$0	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Net Revenue Requirement			\$221,929	\$709,552	\$1,197,175	\$1,684,797	\$2,172,420	\$2,660,043
Required Rate Increase (Excluding Tier 1 Residential)			2.6%	8.4%	14.2%	20.0%	25.8%	31.5%

* Based on total water purchases of 1,484,092, which includes estimated sales of 1,387,000 plus 7% unbilled water.

Table B-6
 Mid-Peninsula Water District
 Water Shortage Emergency Rates 2019/20

2019/20

Based on % Increase to Water Consumption Charges
 With No Increase to Residential Tier 1 (0-2 hcf)

		Water Shortage Cutback Targets 2019/20						
Water Supply Reduction %	2013 Baseline*	25%	30%	35%	40%	45%	50%	
Cutback Built into Rate Projections		23.3%	23.3%	23.3%	23.3%	23.3%	23.3%	
Additional Cutback Over Projected Demand		2.3%	8.8%	15.3%	21.8%	28.3%	34.8%	
Water Sales Cutback	Cutback							
<u>Single Family Residential</u>	<u>Multiplier</u>							
Tier 1 0 - 2 hcf	20%	225,660	1,024	3,964	6,905	9,845	12,786	15,726
Tier 2 3 - 8 hcf	135%	403,740	12,362	47,875	83,387	118,899	154,412	189,924
Tier 3 9 - 20 hcf	165%	205,950	7,707	29,848	51,989	74,129	96,270	118,411
Tier 4 26 hcf & above	200%	52,340	2,374	9,195	16,015	22,835	29,656	36,476
<u>All Other</u>								
Tier 1 0 - 5 hcf	50%	38,000	431	1,669	2,907	4,145	5,383	6,621
Tier 2 6 hcf & above	80%	461,320	8,370	32,416	56,462	80,508	104,553	128,599
Total		1,387,000	32,269	124,966	217,664	310,362	403,059	495,757
% Reduction			2.3%	9.0%	15.7%	22.4%	29.1%	35.7%
Projected Rates								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$6.25	\$6.25	\$6.25	\$6.25	\$6.25	\$6.25
Tier 2 3 - 8 hcf			9.00	9.00	9.00	9.00	9.00	9.00
Tier 3 9 - 20 hcf			11.00	11.00	11.00	11.00	11.00	11.00
Tier 4 26 hcf & above			13.00	13.00	13.00	13.00	13.00	13.00
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$8.00	\$8.00	\$8.00	\$8.00	\$8.00	\$8.00
Tier 2 6 hcf & above			9.50	9.50	9.50	9.50	9.50	9.50
Projected Revenue Loss								
<u>Single Family Residential</u>								
Tier 1 0 - 2 hcf			\$6,398	\$24,776	\$43,155	\$61,533	\$79,912	\$98,290
Tier 2 3 - 8 hcf			111,259	430,871	750,483	1,070,095	1,389,707	1,709,319
Tier 3 9 - 20 hcf			84,780	328,328	571,875	815,423	1,058,970	1,302,518
Tier 4 26 hcf & above			<u>30,865</u>	<u>119,530</u>	<u>208,195</u>	<u>296,860</u>	<u>385,525</u>	<u>474,190</u>
Subtotal			233,301	903,504	1,573,707	2,243,911	2,914,114	3,584,317
<u>All Other</u>								
Tier 1 0 - 5 hcf			\$3,447	\$13,351	\$23,254	\$33,158	\$43,061	\$52,965
Tier 2 6 hcf & above			<u>79,519</u>	<u>307,953</u>	<u>536,387</u>	<u>764,822</u>	<u>993,256</u>	<u>1,221,690</u>
Subtotal			82,967	321,304	559,642	797,980	1,036,317	1,274,655
Total			\$316,268	\$1,224,809	\$2,133,349	\$3,041,890	\$3,950,431	\$4,858,972
Less Reduced SFPUC Purchases			34,527	133,714	232,900	332,087	431,274	530,460
SFPUC Wholesale Rate			<u>\$4.72</u>	<u>\$4.72</u>	<u>\$4.72</u>	<u>\$4.72</u>	<u>\$4.72</u>	<u>\$4.72</u>
Subtotal			(162,969)	(\$631,130)	(\$1,099,290)	(\$1,567,451)	(\$2,035,612)	(\$2,503,772)
Plus Add'l Conservation Program Costs			\$0	\$50,000	\$100,000	\$150,000	\$200,000	\$250,000
Net Revenue Requirement			\$153,299	\$643,679	\$1,134,059	\$1,624,439	\$2,114,820	\$2,605,200
Required Rate Increase (Excluding Tier 1 Residential)			1.7%	7.3%	12.8%	18.4%	23.9%	29.4%

* Based on total water purchases of 1,484,092, which includes estimated sales of 1,387,000 plus 7% unbilled water.