CITY OF DAVIS

2014 Water Rate Cost of Service Update

July 31, 2014

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Sections 1 – 7 of the City of Davis March 12, 2013 Water Rate Cost of Service Study is available online at water.cityofdavis.org/rates.

SECTION 8: 2014 WATER RATE COST OF SERVICE UPDATE

Measure P

On June 3, 2014, Measure P was passed which repealed Ordinance No. 2405. Ordinance No. 2405 was adopted in March 2013 by the Davis City Council, authorizing water rate increases through January 1, 2018 as recommended in the City of Davis Water Rate Cost of Service Study, Final Report, March 12, 2013 ("2013 Water Rate Cost of Service Study"). Measure P repealed the 2013-approved rate schedule in its entirety and reinstated the water rates in effect prior to May 1, 2013 under Ordinance No. 2364 adopted June 1, 2010 ("2010 rates"). The 2010 rates became effective (again) on July 4, 2014 and are shown below.

2010 Water Rates

	Monthly		Bi-Monthly	
BASE RATE				
Meter Size				
5/8" or 3/4"		$11.50		$23.00
1"		$16.20		$32.40
1-1/2"		$27.90		$55.80
2"		$42.00		$84.00
3"		$80.00		$160.00
4"		$122.00		$244.00
6"		$238.00		$476.00
METERED RATE CHARGE - PER HUNDRED CUBIC FEET (CCF)				
Use Classification	**Use Tiers**	**Unit Charge**	**Use Tiers**	**Unit Charge**
Single Family Residential (Use per dwelling unit)	Tier 1: 0 - 18 ccf Tier 2: Over 18 ccf	$1.50 $1.90	Tier 1: 0 - 36 ccf Tier 2: Over 36 ccf	$1.50 $1.90
Multi-Family Residential (Use per dwelling unit)	Tier 1: 0 - 7 ccf Tier 2: Over 7 ccf	$1.42 $1.90	Tier 1: 0 - 14 ccf Tier 2: Over 14 ccf	$1.42 $1.90
Small Commercial/Industrial Up to 1-1/2" meters	Tier 1: 0 - 57.5 ccf Tier 2: Over 57.5 ccf	$1.41 $1.90	Tier 1: 0 - 115 ccf Tier 2: Over 115 ccf	$1.41 $1.90
Large Commercial/Industrial 2" meters and larger	Tier 1: 0 - 309.5 ccf Tier 2: Over 309.5 ccf	$1.51 $1.90	Tier 1: 0 - 619 ccf Tier 2: Over 619 ccf	$1.51 $1.90
Irrigation (Use per acre)	Tier 1: 0 - 181.5 ccf Tier 2: Over 181.5 ccf	$1.41 $1.90	Tier 1: 0 - 363 ccf Tier 2: Over 363 ccf	$1.41 $1.90
Municipal	All Consumption	$1.41	All Consumption	$1.41
* CCF = hundred cubic feet (1 ccf = 748 gallons)				

As a result of the rate rollback, the water utility will lose approximately $400,000 per month in revenue during the summer months when water consumption is typically at its highest. To limit additional revenue losses, the City retained Bartle Wells Associates ("BWA") to develop new water rates based on an updated cost of service study and in compliance with Proposition 218. The objective is to implement the new water rates beginning on November 1, 2014.

URAC

The Utility Rate Advisory Committee (URAC) was established in November 2013 to advise the City Council on utility rates and related matters. The URAC consists of seven members with one alternate. Each Councilmember appoints one member. The additional two members and one alternate are appointed by a majority vote of the City Council. Meetings are typically held on the second Tuesday of each month at 6:30pm.

In June 2014, BWA met with the URAC at three meetings to discuss updated project costs, rate structure alternatives, fixed vs. variable revenue recovery, water use assumptions, and potential impacts on customers. The URAC ultimately could not reach consensus on a formal rate structure recommendation to the City Council.

Rate Structure Options

At the June 24, 2014 City Council meeting, the City Council directed BWA to evaluate three rate options with a uniform block tier by customer class. The rate options vary in the revenue recovery between the fixed and variable charges:

- **40% Fixed/60% Variable**
  40% of the annual revenue will be derived from the fixed component of the rates. The fixed component shall be based on meter size in compliance with ratios established by the American Water Works Association (AWWA) Principles of Water Rates, Fees, and Charges Manual of Water Supply Practices M1, Sixth Edition, 2012 (M1 Manual). The remaining 60% of the revenue will come from the uniform block rates charges to each specific customer class in accordance with the 2013 Water Rate Cost of Service Study.

- **30% Fixed/70% Variable**
  30% of the annual revenue will be derived from the fixed component of the rates. The fixed component shall be based on meter size in compliance with ratios established by the AWWA M1 Manual. The remaining 70% of the revenue will come from the uniform block rate charges to each specific customer class in accordance with the 2013 Water Rate Cost of Service Study.

- **13% Fixed/87% Variable**
  13% of the annual revenue will be derived from the fixed component of the rates. The fixed component shall be based on meter size in compliance with ratios established by the AWWA M1 Manual. The remaining 87% of the revenue will come from the uniform block rates charges to each specific customer class in accordance with the 2013 Water Rate Cost of Service Study.

In accordance with the information presented to the City Council by the City's Financial Advisor, the rate structure options were designed with a Rate Stabilization Reserve policy that reflects the risk associated with the variability of revenues for each option. Additionally, in response to the State's severe drought emergency, the rate options included a drought surcharge triggered by various stages of reduction in consumption.

Constitutional Rate Requirements

The California Constitution includes two key articles that directly govern or impact the City's water rates: Article 10 and Article 13D. The water rates developed in this 2014 Update 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 City's cost of providing water service; b) allocate costs in proportion to the cost for serving each customer class; and c) promote conservation and discourage waste.

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.*

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 service 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 from this voting requirement rates for water, sewer, and garbage service.

The substantive requirements of Article 13D, Section 6 require the City'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.

A subsequent appellate court decision in 2011 further clarified that agencies must demonstrate, satisfactory to a court's independent judgment, that property-related fees and charges meet the substantive requirements of Section 6 (3b). This rate study provides that justification. The water rates derived in this report are based on a cost-of-service methodology that fairly apportions costs to all customers.

Use of Generally Accepted Rate-Making Principles

The rates developed in this 2014 Update 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 rates were developed using generally accepted cost-based principles and methodologies for establishing water rates, charges, and fees contained and discussed in the AWWA M1 Manual. In developing water rates, it is important to know that there is no "one-size-fits-all" approach for establishing cost-based water rates, "the (M1 Manual) is aimed at outlining the basic elements involved in water rates and suggesting alternative rules of

procedure for formulating rates, thus permitting the exercise of judgment and preference to meet local conditions and requirements." [1]

Council Recommended Rate Structure: 13% Fixed/87% Variable

At the July 1, 2014 meeting, the City Council moved to adopt five-years of water rate increases based on the 13% Fixed/ 87% Variable rate structure that can be included in a Proposition 218 notice. Consistent with Article X of the California Constitution and in conjunction with Article XIIID, the City is electing to recover more than 60% of the costs from the volumetric rate. This is to provide an additional incentive to encourage conservation and discourage the waste or unreasonable use of water in the City.

The first rate increase is proposed to go into effect on November 1, 2014. The next rate increase will be effective on January 1, 2016 and each January 1 thereafter through 2018. This 2014 addendum updates the expense and consumption projections used in the 2013 Water Rate Cost of Service Study to develop water rates that provide the City with the necessary funding to meet bond coverage requirements, pay future debt service obligations, sustain the capital improvement program, and cover increased operating and maintenance costs through fiscal year 2018/19. The proposed rates have been developed using conservation projections based on the most recent information available at the time.

Number of Meters

Table 1 includes the number of customers within the City's service area by meter size for calendar years 2011 through 2013 as well as a three-year average summary. Between 2011 and 2013, the total number of meters increased approximately 1 percent, which is consistent with the growth projections estimated in the 2013 Water Rate Cost of Service Study.

[1] AWWA Manual M1 Manual, Principles of Water Rates, Fees, and Charges, Sixth Edition, 2012, page 5.

Table 1. Customers by Meter Size

2011 Meter Count					
	Single Family Residential	Multi-Family Residential	Commercial	Irrigation	Total
5/8 or 3/4"	11,892	85	149	55	12,181
1"	2,744	201	272	147	3,364
1-1/2"	95	76	156	129	456
2"	5	77	113	100	295
3"	0	51	20	19	90
4"	1	22	4	13	40
6"	0	0	3	0	3
8"	0	4	0	0	4
Total	14,737	516	717	463	16,433
% of Total	*90%*	*3%*	*4%*	*3%*	*100%*

2012 Meter Count					
	Single Family Residential	Multi-Family Residential	Commercial	Irrigation	Total
5/8 or 3/4"	11,926	84	145	59	12,214
1"	2,853	201	272	154	3,480
1-1/2"	8	74	113	127	322
2"	0	52	20	22	94
3"	96	74	156	128	454
4"	1	22	4	14	41
6"	0	0	3	0	3
8"	0	4	0	0	4
Total	14,884	511	713	504	16,612
% of Total	*90%*	*3%*	*4%*	*3%*	*100%*

2013 Meter Count					
	Single Family Residential	Multi-Family Residential	Commercial	Irrigation	Total
5/8 or 3/4"	11,917	84	145	58	12,204
1"	2,882	200	275	159	3,516
1-1/2"	6	74	112	136	328
2"	0	50	22	21	93
3"	96	75	160	134	465
4"	1	23	4	14	42
6"	0	0	3	0	3
8"	0	4	0	0	4
Total	14,902	510	721	522	16,655

Three-Year (2011-13) Average Meter Count					
	Single Family Residential	Multi-Family Residential	Commercial	Irrigation	Total
5/8 or 3/4"	11,912	84	146	57	12,200
1"	2,826	201	273	153	3,453
1-1/2"	36	75	127	131	369
2"	2	60	52	48	161
3"	64	67	112	94	336
4"	1	22	4	14	41
6"	0	0	3	0	3
8"	0	4	0	0	4
Total	14,841	512	717	496	16,567
% of Total	*90%*	*3%*	*4%*	*3%*	*100%*

The most common method to levy fixed charges is by meter size. Meter size is used as a proxy for the estimated demand that each customer places on the water system. The base meter is most commonly a 5/8-inch or 3/4-inch meter. A meter equivalent ratio represents the capacity of a base 5/8-inch or 3/4-inch meter. The ratio at which the meter charge increases is typically a function of either meter investment (estimated cost) or the meter's safe operating capacity. A significant portion of a water system's design and, in turn, the utility's operating and capital costs are related to meeting capacity requirements. Larger meters are converted into meter equivalents in order to determine a common underlying fixed charge that can be applied to the capacity of each meter size.

As shown on Table 2, BWA recommends aligning the fixed charges with the AWWA meter capacity ratios based on the safe maximum operating capacity from the AWWA M1 Manual. For example, based on the AWWA meter capacity rations, a customer that has a 2-inch meter has 5.33 times the capacity equivalency of a customer with a 3/4-inch meters. (A 2-inch meter has a safe operating capacity of 160 gallons per minute (gpm) compared to a 3/4-inch meter which has a safe operating capacity of 30 gpm). The capacity-based meter ratios are widely used in California rate setting and are consistent with meter ratios adopted by the California Public Utility Commission for private water companies.

Table 2. AWWA Meter Capacity Ratios

AWWA Recommended Meter Capacity Ratios		
Meter Size	**Safe Max Operating Capacity for C712-10 Singlejet Type (gpm)**	**Equivalency Factor based on 3/4-inch meter**
5/8-in or 3/4-in	30	1.00
1-in	50	1.67
1-1/2-in	100	3.33
2-in	160	5.33
3-in	320	10.67
4-in	500	16.67
6-in	1000	33.33
8-in	1600	53.33

Source: AWWA's M1 Manual, Principles of Water Rates, Fees, and Charges, Sixth Edition, 2012, Table B-1

Table 3 summarizes the City's meter capacity ratios and three-year (2011 – 2013) average total number of equivalent meters by customer class. The average total number of equivalent meters is 24,636.

Table 3. Total Meter Equivalents

Three-Year (2011 - 2013) Average Total Equivalent Meters						
	Meter Ratio	Single Family Residential	Multi-Family Residential	Commercial	Irrigation	Total
5/8 or 3/4"	1.00	11,912	84	146	57	12,200
1"	1.67	4,720	335	456	256	5,767
1-1/2"	3.33	121	249	423	435	1,228
2"	5.33	9	318	275	254	856
3"	10.67	683	711	1,195	999	3,589
4"	16.67	17	372	67	228	683
6"	33.33	0	0	100	0	100
8"	53.33	0	213	0	0	213
Total		17,461	2,283	2,662	2,230	24,636
% of Total		*71%*	*9%*	*11%*	*9%*	*100%*

1 - Based on American Water Works Association Standard Meter Capacities

Water Consumption

The 2013 Water Rate Cost of Service Study utilized water consumption for the calendar year 2011 as the base year to develop rates. For this update, BWA analyzed an additional two years of consumption for the calendar years 2012 and 2013. Between 2011 and 2013, total City-wide water use increased approximately 15 percent. The increase in overall consumption may be attributed to several factors including the weather, meter replacements, and the economy.

Initial water use information for the 2014 January through May period indicates a significant reduction in consumption. This may be due to a number of factors; including Californian's worsening three-year drought, the expected implementation of the Consumption Based Fixed Rates (CBFR) rate structure (which would have used the customer's May through Octobers 2014 water consumption amount to set 2015 CBFR rates) or other factors. BWA used the three-year average of calendar years 2011 through 2013, and subtracted 10 percent to set the base year (2014/15) consumption by customer class.

Table 4 includes annual water consumption by customer class for the three-year period of 2011 through 2013 as well as a three-year average summary. The table also shows the peaking ratio for each class. The peak ratio/factor is the ratio of maximum flow to the average daily flow and is calculated by taking the highest use month over average annual use.

Customer peak demand characteristics, as measured by each customer category's peak ratio, have a considerable impact on the cost for providing water service. A significant portion of

capacity-related costs incurred by a water utility are to accommodate variations in consumption and to meet peak use requirements. Storage facilities, for example, are designed and constructed to meet demands during peak periods. Thus, the customers causing peak demands should pay for the demand-related facilities in proportion to their contribution to peak demands.

Figure 1 shows the three-year average use graphically. Irrigation accounts have the highest peaking factor, followed by single family residential customers. As expected, these classes tend to use more water during the summer months.

Table 4. Water Consumption by Class

2011 Water Consumption and Peaking Ratios by Customer Class (ccf)											
Customer Class	**Jan/Feb**	**Mar/Apr**	**May/Jun**	**Jul/Aug**	**Sept/Oct**	**Nov/Dec**	**Total**	**% of Total**	**Peak**	**Average**	**Peak Ratio**
Single Family Residential	211,655	319,455	541,267	682,622	501,043	278,118	2,534,160	55.7%	682,622	422,360	1.62
Multi-Family Residential	137,573	155,415	188,376	198,744	174,755	127,190	982,053	21.6%	198,744	163,676	1.21
Commercial	48,339	59,123	86,082	100,993	84,548	61,365	440,450	9.7%	100,993	73,408	1.38
Irrigation	9,398	40,158	145,113	205,218	146,349	47,039	593,275	13.0%	205,218	98,879	2.08
Total	406,965	574,151	960,838	1,187,577	906,695	513,712	4,549,938	100.0%	1,187,577	758,323	1.57
Percent of Total	*8.9%*	*12.6%*	*21.1%*	*26.1%*	*19.9%*	*11.3%*	*100.0%*				

2012 Water Consumption and Peaking Ratios by Customer Class (ccf)											
Customer Class	**Jan/Feb**	**Mar/Apr**	**May/Jun**	**Jul/Aug**	**Sept/Oct**	**Nov/Dec**	**Total**	**% of Total**	**Peak**	**Average**	**Peak Ratio**
Single Family Residential	266,740	296,425	665,066	727,421	549,776	233,464	2,738,892	53.7%	727,421	456,482	1.59
Multi-Family Residential	142,616	152,951	199,780	207,247	186,586	126,759	1,015,939	19.9%	207,247	169,323	1.22
Commercial	55,396	62,072	98,098	104,837	91,962	55,859	468,224	9.2%	104,837	78,037	1.34
Irrigation	38,044	98,699	233,963	322,484	164,204	22,536	879,931	17.2%	322,484	146,655	2.20
Total	502,796	610,147	1,196,907	1,361,989	992,528	438,618	5,102,986	100.0%	1,361,989	850,498	1.60
Percent of Total	*9.9%*	*12.0%*	*23.5%*	*26.7%*	*19.4%*	*8.6%*	*100.0%*				

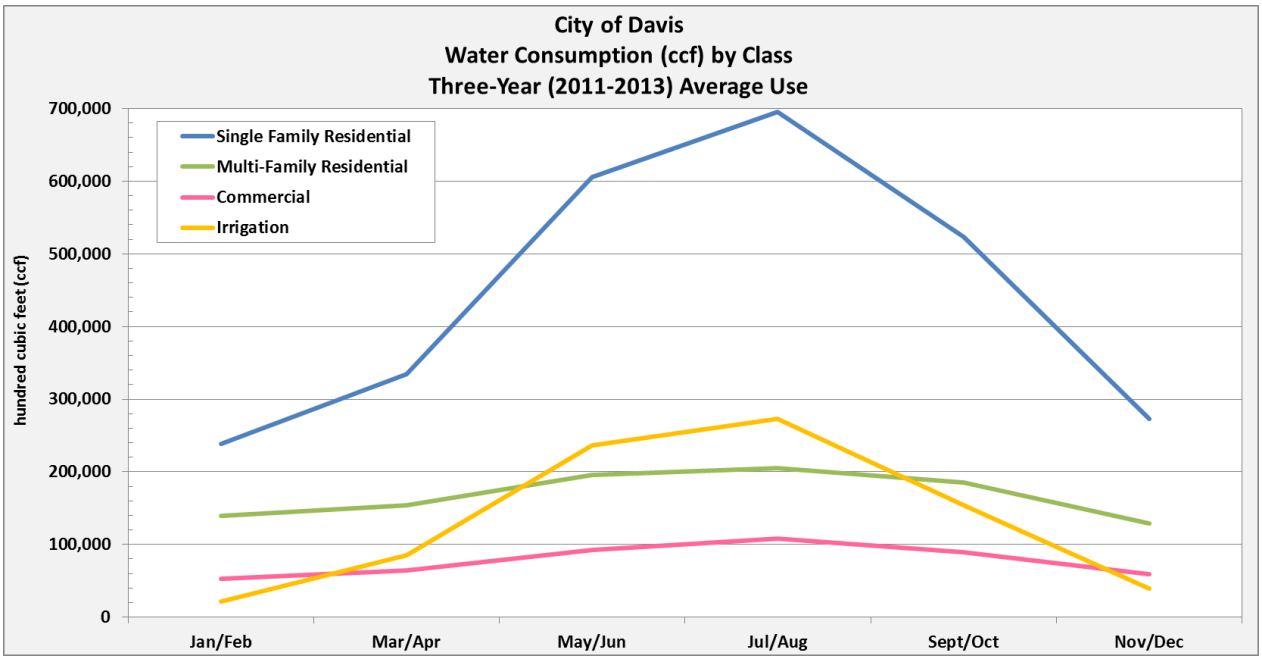
2013 Water Consumption and Peaking Ratios by Customer Class (ccf)											
Customer Class	**Jan/Feb**	**Mar/Apr**	**May/Jun**	**Jul/Aug**	**Sept/Oct**	**Nov/Dec**	**Total**	**% of Total**	**Peak**	**Average**	**Peak Ratio**
Single Family Residential	235,843	385,991	611,410	675,111	520,079	308,757	2,737,190	52.5%	675,111	456,198	1.48
Multi-Family Residential	139,378	154,565	198,221	210,440	193,408	134,408	1,030,420	19.8%	210,440	171,737	1.23
Commercial	53,958	72,835	92,800	119,787	90,366	60,721	490,467	9.4%	119,787	81,745	1.47
Irrigation	18,834	115,397	329,166	291,370	152,512	47,933	955,212	18.3%	329,166	159,202	2.07
Total	448,013	728,788	1,231,597	1,296,708	956,364	551,819	5,213,290	100.0%	1,296,708	868,882	1.49
Percent of Total	*8.6%*	*14.0%*	*23.6%*	*24.9%*	*18.3%*	*10.6%*	*100.0%*				

Three-Year Average Water Consumption and Peaking Ratios by Customer Class (ccf)											
Customer Class	**Jan/Feb**	**Mar/Apr**	**May/Jun**	**Jul/Aug**	**Sept/Oct**	**Nov/Dec**	**Total**	**% of Total**	**Peak**	**Average**	**Peak Ratio**
Single Family Residential	238,079	333,957	605,914	695,051	523,633	273,446	2,670,081	53.9%	695,051	445,013	1.56
Multi-Family Residential	139,856	154,310	195,459	205,477	184,916	129,452	1,009,471	20.4%	205,477	168,245	1.22
Commercial	52,564	64,677	92,327	108,539	88,959	59,315	466,380	9.4%	108,539	77,730	1.40
Irrigation	22,092	84,751	236,081	273,024	154,355	39,170	809,473	16.3%	273,024	134,912	2.02
Total	452,591	637,695	1,129,781	1,282,091	951,863	501,383	4,955,404	100.0%	1,282,091	825,901	1.55
Percent of Total	*9.1%*	*12.9%*	*22.8%*	*25.9%*	*19.2%*	*10.1%*	*100.0%*				

Three-Year Average Less 10 Percent Water Consumption and Peaking Ratios by Customer Class (ccf)*											
Customer Class	**Jan/Feb**	**Mar/Apr**	**May/Jun**	**Jul/Aug**	**Sept/Oct**	**Nov/Dec**	**Total**	**% of Total**	**Peak**	**Average**	**Peak Ratio**
Single Family Residential	216,652	303,901	551,382	632,497	476,506	248,836	2,429,774	49.0%	632,497	404,962	1.56
Multi-Family Residential	127,269	140,422	177,868	186,984	168,274	117,802	918,618	18.5%	186,984	153,103	1.22
Commercial	47,834	58,856	84,017	98,770	80,952	53,977	424,406	8.6%	98,770	70,734	1.40
Irrigation	20,104	77,124	214,833	248,452	140,463	35,644	736,620	14.9%	248,452	122,770	2.02
Total	411,858	580,303	1,028,100	1,166,703	866,195	456,259	4,509,418	91.0%	1,166,703	751,570	1.55
Percent of Total	*9.1%*	*12.9%*	*22.8%*	*25.9%*	*19.2%*	*10.1%*	*100.0%*				

* Based on the three-year (calendar years 2011through 2013) average less 10% to reflect January through May 2014 consumption patterns influenced by the drought and other factors

Figure 1. Three- Year (2011 – 2013) Average Water Consumption (ccf) by Class



2013/2014 Water Fund Reserves

As shown on Table 5, total working capital in operations, capital, and replacements as of June 30, 2014 is estimated at $7.8 million.

Table 5. Estimated June 30, 2014 Water Fund Reserves

Fund	Description	Estimated June 30, 2014
511	Maintenance & Operation	$2,991,505
512	Capital Replacement Reserve	$5,888,397
513	Capital Expansion Reserve	($1,061,643)
	Total	$7,818,259

Source: June 30, 2014 email from Pamela Day

Recommended Reserve Fund Targets

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. The fund reserve targets will escalate over time as the water utility's expenses

gradually increase in future years. BWA recommends the following fund reserve targets for the water utility:

- **Operating Fund (Fund 511) Reserve:** Minimum balance target equivalent to 25 percent (or 3 months) of annual operating and maintenance expenses. The target ranges from $2.12 million in 2014/15 and increases to $3.03 million in 2018/19.
- **Rate Stabilization Fund Reserve:** Minimum balance target equal to two years of 20 percent reduction in volumetric water sales. Deposits into this reserve are made from current system revenues.
- **Capital Replacement (Fund 512) and Expansion Fund (Fund 513) Reserve:** Minimum balance target of $2 million to provide emergency funding for unexpected capital projects.

For the 2014 Water Rate Cost of Service Study Update, BWA proposes to maintain the minimum fund targets for the Operating Fund Reserve and Capital Replacement and Expansion Fund Reserve. BWA recommends increasing the minimum target for the Rate Stabilization Fund Reserve, to account for the increased variability of water sales revenues. The purpose of the Rate Stabilization Fund Reserve is to establish a means to provide more stable water service charges to the City's customers. A Rate Stabilization Fund Reserve buffers the impacts of unanticipated fluctuations or revenue shortfalls in water fund revenues. Unexpected fluctuations can include, but are not limited to periods of drought, natural disasters, an economic downturn, and/or other extraordinary circumstances. The reserves in the rate stabilization fund may also be used as revenues for the calculation of ongoing debt service coverage to comply with bond covenants.

The recommended annual fund target is two years of 20 percent of the annual projected variable revenues. This is judged by BWA to be adequate to allow the City to mitigate anticipated revenue fluctuations and transition smoothly to a drought surcharge if needed. The minimum rate stabilization fund reserve target for 2014/15 is $5,236,704 and is calculated as follows: The "12 Month Rate Revenue Target" (from the estimated cash flow) for 2014/15 is $15,048,000. The variable portion of the total revenues is estimated at 87 percent or $13,091,760. Twenty percent of $13,091,760 is $2,618,352. Multiplying this amount by 2 (the number of years) equals $5,236,704. For 2018/19, the Rate Stabilization Fund Reserve target increases to $8,457,096.

The recommended reserve policies will result in the accumulation of about $13.5 million in total water utility fund reserves by 2018/19.

Updated Capital Improvement Project (CIP)

Table 6 summarizes the updated capital expenses used to estimate future debt service. Capital costs include the City's share of the Surface Water Project ("SWP"), local transmission projects related to the SWP, and other City local projects not related to the SWP. Annual repairs and replacements are included with "Other Davis Local Non SWP Costs." The refinancing of the $30 million Wells Fargo loan that the City obtained in 2011 to fund infrastructure projects is also included. All costs have been escalated based on the 2012 OMB Circular No. A-94 from the Executive Office of the President, Office of Management and Budget which was used in the 2013 Water Rate Cost of Service Study.

Table 6. Updated Capital Improvement Projects

Fiscal Year of Issuance	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	Total
2012 Compounded Inflation Rate	*0.53%*	*1.61%*	*3.23%*	*4.93%*	*6.72%*	*8.59%*	*10.54%*	
Davis Share of WDCWA SWP Costs		$50,219,000	$24,783,000	$0	$0	$0	$0	$75,002,000
Davis Local SWP Transmission Costs		$0	$19,613,000	$0	$0	$0	$0	$19,613,000
Other Davis Local Non SWP Costs		$0	$0	$5,597,000	$5,692,000	$5,792,000	$0	$17,081,000
Refund Wells Fargo loan		$30,000,000	$0	$0	$0	$0	$0	$30,000,000
Total		**$80,219,000**	**$44,396,000**	**$5,597,000**	**$5,692,000**	**$5,792,000**	**$0**	**$141,696,000**

Debt Service Estimates

The water utility's only current outstanding debt is a 2009 IBank Loan for the East Area Tank and other components of the Davis Wells Capacity Environmental Impact Report (EIR) project. The loan cannot exceed $10 million and bears interest at 4.0 percent per year. Annual debt service payments are $524,000 with the last payment due in 2038.

As a conservative estimate, the debt service projections assume that the City will fund the SWP and other capital needs with revenue bonds. Table 7 shows the updated debt service projections provided by NHA Advisors, the City's financial advisor. The 2014 Update debt service projections assume current market rate bonds. Total projected debt service through 2048/49 is estimated at approximately $270 million, compared to the 2013 Water Rate Cost of Service Study which had estimated roughly $375 million of total debt service. The debt service projections used in the 2013 Water Rate Cost of Service Study were conservative and based on preliminary estimated costs for the SWP. Project costs as well as interest rates have since been updated and refined.

The debt proceeds shown in the cash flow projection are aligned with the capital funding requirements for the SWP. The City's actual debt issuances from year to year may vary based on actual financing needs and the availability of low-cost State and/or Federal financing and other factors.

Table 7. Debt Service Estimates

Fiscal Year Ending	Annual Debt Service Estimates from 2013 Study (1)	Annual Debt Service Estimates from 2014 Update (1)	Difference
2013	$544,000	$0	$544,000
2014	$2,357,380	$389,250	$1,968,130
2015	$5,340,751	$1,654,716	$3,686,035
2016	$7,867,423	$3,900,306	$3,967,118
2017	$9,968,398	$5,527,474	$4,440,925
2018	$10,405,473	$7,166,360	$3,239,114
2019	$11,229,911	$8,249,974	$2,979,937
2020	$11,920,493	$8,677,357	$3,243,137
2021	$12,025,818	$9,100,518	$2,925,300
2022	$12,031,093	$9,193,875	$2,837,218
2023	$12,021,718	$9,189,950	$2,831,768
2024	$12,023,043	$9,185,147	$2,837,897
2025	$12,902,313	$9,194,423	$3,707,890
2026	$13,061,525	$9,193,293	$3,868,233
2027	$13,063,700	$9,191,051	$3,872,649
2028	$13,057,763	$9,188,105	$3,869,658
2029	$13,063,400	$9,189,549	$3,873,851
2030	$13,059,138	$9,189,799	$3,869,339
2031	$13,059,800	$9,187,579	$3,872,221
2032	$13,059,138	$9,188,279	$3,870,859
2033	$13,061,275	$9,186,139	$3,875,136
2034	$13,070,200	$9,185,445	$3,884,755
2035	$13,059,338	$9,180,795	$3,878,543
2036	$13,053,713	$9,186,781	$3,866,932
2037	$13,051,925	$9,190,118	$3,861,808
2038	$13,057,425	$9,183,415	$3,874,011
2039	$13,063,625	$9,186,360	$3,877,266
2040	$13,068,988	$9,187,651	$3,881,337
2041	$13,052,088	$9,186,375	$3,865,713
2042	$12,513,663	$9,184,175	$3,329,488
2043	$10,089,700	$9,187,438	$902,263
2044	$7,008,058	$9,189,788	($2,181,729)
2045	$3,908,262	$9,180,138	($5,271,875)
2046	$2,913,765	$4,517,950	($1,604,185)
2047	$2,590,202	$1,262,813	$1,327,390
2048	$1,649,640	$842,813	$806,827
2049	$1,030,165	$419,688	$610,477
2050	$1,035,907	$0	$1,035,907
2051	$1,036,507	$0	$1,036,507
2052	$1,033,857	$0	$1,033,857
2053	$1,037,957	$0	$1,037,957
2054	($10,443)	$0	($10,443)
Total Debt Service	**$375,438,101**	**$272,214,878**	**$103,223,223**

1 - Does not include debt service for 2009 Ibank Loan

State Revolving Fund Loan

The City continues to evaluate other financing alternatives to reduce capital costs, including applying for a low-cost loan from the Clean Water State Refunding Fund (SRF) loan program from the State Water Resources Control Board (SWRCB). The SRF program offers 30-year fixed-rate loans for eligible water projects. The program can currently be used to fund up to $50 million of projects per year. The interest rate is set at roughly one half of the state's general obligation bond rate; current interest rates are below 2.5%. Debt service repayment starts one year after the project is completed. Debt repayment is typically secured by an agency's legal pledge to raise rates and fees as needed to repay debt service. The City anticipates that funding a portion of the surface water project with Federal and/or State low-cost loans and grants will lower overall water rates.

Debt Service Coverage

When issuing bonds, the City will have to legally abide by a number of debt covenants designed to ensure adequate repayment security. Key among these is a debt service coverage covenant that requires the City to raise water rates as needed to achieve 110% coverage on annual debt service per NHA Advisors. This means that annual net revenues (total revenues less operations and maintenance expenses) must be at least 110% of combined annual debt service payments on all parity (i.e. first lien) water obligations. Operating expenses include baseline operating expenses, operating costs for the SWP, and Conaway Preservation Group (CPG) water rights payments. Coverage ratios are a financial measure of the water utility's ability to repay outstanding debt and are a standard legal covenant for securing water revenue bonds or similar debt financing.

Cash Flow Projections

BWA updated the long-term cash flow projections to determine annual revenue requirements and project water rate increases as shown on Table 8. The financial projections incorporate the latest information available as well as a number of reasonable and slightly conservative assumptions:

<u>Revenues</u>

- The first rate adjustments are proposed to take effect on November 1, 2014. Rate increases thereafter are proposed to be effective on January 1, beginning on January 1, 2016.
- Slow to moderate growth in the number of new connections is projected in the next 5 years. The projections include growth of 0.5 percent per year through fiscal year 2015/16. Beginning in fiscal year 2016/17 and continuing thereafter, 1.0 percent annual growth is assumed based on staff projections.

- The interest earning rate on reserve funds is estimated at 0.5 percent each year beginning in fiscal year 2012/13 and gradually increases to 2 percent.
- Other Revenues are escalated by 3 percent each year based on historical trends. Other Revenues include capacity fees, sale of surplus/salvage, water shut off and reconnection fees, fire hydrant use permits, water meter installation fees, cross connection certification fees, encroachment permits, North Davis Meadows water service, and other investments.
- Service (fixed) charges are designed to recover about 13% of total utility costs, and volume charges will recover about 87% of total expenses.
- Water sales are projected to decline based on the elasticity assumptions shown in the next section.

Expenses

- Based on discussion with City staff on current and expected staffing levels, future salaries and wages are escalated by 3.8 percent.
- Other Baseline expenses are escalated by 3 percent per year based on historical inflation trends.
- CPG water rights payments begin in fiscal year 2015/16.
- All baseline and local repairs and replacement capital projects are included.
- The Wells Fargo loan will be refinanced with the first borrowing.
- All capital projects, including projects for the Surface Water Project as well as local City projects, will be debt-financed.

Table 8. Cash Flow Projections

	Base Year	2014 Rate Study					Projected				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21	2021/22	2022/23	2023/24
Assumptions:											
Revenue Increase		14.0%	14.0%	14.0%	14.0%	9.0%	9.0%	4.0%	3.0%	3.0%	3.0%
Interest Earnings Rate		1.0%	1.0%	1.5%	1.5%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Growth		0.5%	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%
Beginning Fund Balance - Fund 511		$7,818,000	$11,282,578	$12,929,273	$12,815,975	$12,776,616	$13,782,641	$15,811,894	$15,462,173	$15,439,742	$15,700,473
12 MONTH RATE REVENUE TARGET	13,200,000	15,048,000	17,155,000	19,557,000	22,295,000	24,302,000	26,489,000	27,549,000	28,375,000	29,226,000	30,103,000
Effective Date of Rate Increase		11/1/14	1/1/16	1/1/17	1/1/18	1/1/19	1/1/20	1/1/21	1/1/22	1/1/23	1/1/24
REVENUES (1)											
Operating Revenues											
Projected FY Water Sales	13,200,000	14,000,000	15,891,000	18,116,000	20,652,000	23,098,000	25,177,000	26,913,000	27,879,000	28,715,000	29,577,000
Water Meter Replacement Charge Revenues	427,000	440,000	453,000	467,000	481,000	495,000	510,000	525,000	541,000	557,000	574,000
Interest	55	78,000	113,000	194,000	192,000	256,000	276,000	316,000	309,000	309,000	314,000
Rate Stabilization Fund Draws	0	0	0	200,000	700,000	0	0	0	0	0	0
Other Revenues (2)	138,000	142,000	146,000	150,000	155,000	160,000	165,000	170,000	175,000	180,000	185,000
Subtotal Operating Revenues	13,765,055	14,660,000	16,603,000	19,127,000	22,180,000	24,009,000	26,128,000	27,924,000	28,904,000	29,761,000	30,650,000
Debt Proceeds											
Water Revenue Bonds (3)	0	80,701,000	44,396,000	5,597,000	5,692,000	5,792,000	7,400,000	0	0	0	0
Subtotal Debt Proceeds	0	80,701,000	44,396,000	5,597,000	5,692,000	5,792,000	7,400,000	0	0	0	0
TOTAL REVENUES	**13,765,055**	**95,361,000**	**60,999,000**	**24,724,000**	**27,872,000**	**29,801,000**	**33,528,000**	**27,924,000**	**28,904,000**	**29,761,000**	**30,650,000**
EXPENSES											
Baseline Expenses w/o Surface Water Project											
Labor - Salaries/Wages (4)	3,981,000	4,132,000	4,288,000	4,450,000	4,619,000	4,795,000	4,977,000	5,166,000	5,362,000	5,566,000	5,778,000
Other Baseline Expenses (5)	3,348,000	3,467,000	3,591,000	3,303,000	3,402,000	3,504,000	3,609,000	3,746,142	3,888,495	4,036,258	4,189,636
Additional for East Area Tank (5)	63,000	64,000	66,000	67,000	69,000	71,000	73,000	75,000	77,000	79,000	81,000
Additional for Well 32 (5)	415,467	425,853	436,500	447,412	461,000	475,000	489,000	504,000	519,000	535,000	551,000
Additional for Well 34 (5)	415,467	425,853	436,500	447,412	461,000	475,000	489,000	504,000	519,000	535,000	551,000
Local R&R Projects (not incl Water Main Replacements) (6)	0	0	0	0	0	0	7,379,360	3,000,000	3,090,000	3,183,000	3,278,000
Water Main Replacements from Assessment (6)	0	0	0	0	0	0	0	0	0	0	0
Existing Debt Service - 2009 IBank Loan	586,000	586,000	586,000	586,000	586,000	586,000	586,000	586,000	586,000	586,000	586,000
Water Meter Replacement Program	427,000	440,000	453,000	467,000	481,000	495,000	510,000	525,000	541,000	557,000	574,000
Subtotal Baseline Expenses w/o SWP	9,235,933	9,540,707	9,856,999	9,767,824	10,079,000	10,401,000	18,112,360	14,106,142	14,582,495	15,077,258	15,588,636
DWWSP Project											
Pay-As-You-Go Capital Costs	0	0	0	0	0	0	0	0	0	0	0
Debt Financed Capital Costs (3)	0	80,701,000	44,396,000	5,597,000	5,692,000	5,792,000	0	0	0	0	0
CPG Water Purchase (7)	0	0	1,199,000	1,223,000	1,247,000	1,272,000	1,297,000	1,323,000	1,350,000	1,377,000	1,404,000
Operation & Maintenance	0	0	0	2,254,000	2,750,000	2,798,000	2,849,000	2,899,000	2,949,000	2,999,000	3,051,000
Agency Administration	0	0	0	268,000	277,000	282,000	287,000	293,000	299,000	305,000	311,000
Subtotal DWWSP Project Expenses	0	80,701,000	45,595,000	9,342,000	9,966,000	10,144,000	4,433,000	4,515,000	4,598,000	4,681,000	4,766,000
Debt Service (8)											
Wells Fargo Loan	389,250	1,654,716	0	0	0	0	0	0	0	0	0
Surface Water Project Bonds	0	0	3,900,306	5,527,474	7,166,360	8,249,974	8,677,357	9,100,518	9,193,875	9,189,950	9,185,147
2019/20 Bonds	0	0	0	0	0	0	276,030	552,061	552,061	552,061	552,061
Subtotal Debt Service	389,250	1,654,716	3,900,306	5,527,474	7,166,360	8,249,974	8,953,387	9,652,579	9,745,936	9,742,011	9,737,207
TOTAL EXPENSES	9,625,183	91,896,422	59,352,305	24,637,298	27,211,360	28,794,974	31,498,747	28,273,721	28,926,431	29,500,269	30,091,843
Net Revenues	4,139,872	3,464,578	1,646,695	86,702	660,640	1,006,026	2,029,253	(349,721)	(22,431)	260,731	558,157
Ending Fund Balance		11,282,578	12,929,273	12,815,975	12,776,616	13,782,641	15,811,894	15,462,173	15,439,742	15,700,473	16,258,630
Debt Service Coverage - Min. 1.10	5.68	2.74	1.47	1.13	1.18	1.20	1.29	1.34	1.38	1.42	1.46
Debt Service Coverage Met	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*
Fund Reserve Target (9)											
Operating Reserve	2,055,733	2,128,677	2,204,500	2,742,206	2,940,500	3,029,500	3,121,500	3,223,536	3,328,624	3,437,565	3,550,409
Rate Stabilization	4,593,600	5,236,704	5,969,940	6,805,836	7,758,660	8,457,096	9,218,172	9,587,052	9,874,500	10,170,648	10,475,844
Capital Reserve	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000	2,000,000
Total Fund Reserves	8,649,333	9,365,381	10,174,440	11,548,042	12,699,160	13,486,596	14,339,672	14,810,588	15,203,124	15,608,213	16,026,253
Reserve Fund Target Met	*no*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*	*yes*

1 - Source: Water Fund Revenue Estimated Actuals March 2014.

2 - Includes revenues From Investments, Sale of Surplus/Salvage, Water Shut Off/Reconn Fee, Fire Hydrant Use Permit, Cross Conn Cert Fee, Encroachment Permit, Water Meter Instal'n Fee, N. Dav Meadow Water Service.

3 - Source: February 24 Revised CIP for Davis for 5% Rate Reduction Scenario. Project costs have been escalated based on the 2012 Discount Rates for OMB Circular No. A-94 from the Executive Office of the President, Office of Management and Budget dated January 3, 2012. Bond issue for 2019/20 is based on BWA's estimates.

4 - Source: OM Costs. Assumes Labor costs account for 56% of total baseline expenses. Escalated by 3.8% annually.

5 - Source: OM Costs. Other Baseline Expenses = Budget Baseline less Labor Costs. Costs are escalated by 3% beginning in 2017/18.

6 - Assumes all Local R&R projects & Water Main Replacements prior to 2019/20 are debt financed. Projected costs for Local Projects R&R are estimated based on historical average beginning 2020/21.

7 - Source: Table A Purchase Installment Agreement Payment Schedule 2016-2039. Costs have been escalated.

8 - Debt service estimates from NHA Advisors (6/27/14). Assumes Market Rate Bonds with 2015 Bond Series at Current Market Rates.

9 - Recommended operating fund reserve target is equivalent to 3 months (25%) of O&M expenses. Rate stabilization target is 2 years of 20% of variable revenues. Capital reserve is $2 million for Capital.

Elasticity and Conservation Assumptions

Estimating future water usage and the responsiveness of consumption is challenging and difficult to accurately forecast. As a conservative estimate, the 2014 Water Rate Cost of Service Study Update uses the calendar years 2011 through 2013 three-year average less 10 percent as the 2013/14 base year consumption. Table 9 shows the adjusted consumption estimates and peaking ratios.

Price elasticity measures the responsiveness of use to price changes. The price elasticity of demand is the percentage change in quantity of water consumed for each percentage change in price after controlling for the influence of other factors that can also alter water demands, such as income and weather. Water price elasticity is usually negative, signifying that the price and the quantity demanded move in opposite directions such that an increase in price results in a decrease in quantity demanded. For example, a price elasticity factor of -1 means that for every 1 percent increase in price, a corresponding 1 percent decrease in consumption would be seen. Price elasticity varies by customer classes, regions, and time of year.

Table 9. Base Year Consumption, Average Use, and Peaking

Customer Class	Three-Year (2011-2013) Average Use (ccf)	Three-Year (2011-2013) Average Use (ccf) Less 10%	Average % of Total	Peak Month (ccf)	Average Month (ccf)	Peaking Ratio*	Total x Peaking Ratio	Peaking % of Total
Single Family Residential	2,670,081	2,429,774	53.9%	632,497	404,962	1.56	3,794,980	54.2%
Multi-Family Residential	1,009,471	918,618	20.4%	186,984	153,103	1.22	1,121,904	16.0%
Commercial	466,380	424,406	9.4%	98,770	70,734	1.40	592,623	8.5%
Irrigation	809,473	736,620	16.3%	248,452	122,770	2.02	1,490,711	21.3%
Total	4,955,404	4,509,418	100.0%	1,166,703	751,570	1.55	7,000,218	100.0%

* From Table 3

The 2014 Update applies the same standard price elasticity factors as used in the 2013 Water Rate Cost of Service Study to estimate conservation as shown on Table 10. Elasticity for all customer classes is adjusted down beginning in 2016/17, assuming that overall conservation will become less elastic after customers have adjusted their consumption patterns in response to the rate increases and rate structure modifications. Price elasticity is assumed to apply only to increases above the Consumer Price Index (CPI) since rates adjusted by the CPI do not represent an increase in inflation-adjusted dollars.

Table 10. Elasticity and Conservation Assumptions

	Base Year	2014 Rate Study				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Annual Rate Increase (from Cash Flow)	0%	14%	14%	14%	14%	9%
CPI Assumption (1)	3%	3%	3%	3%	3%	3%
Net Rate Increase for Elasticity Calculation	0%	11%	11%	11%	11%	6%
Elasticity Assumptions						
Single-Family Residential	-0.40	-0.40	-0.40	-0.20	-0.20	-0.15
Multi-Family Residential	-0.20	-0.20	-0.20	-0.10	-0.10	-0.05
Commercial	-0.40	-0.40	-0.30	-0.20	-0.20	-0.10
Irrigation	-0.80	-0.80	-0.60	-0.40	-0.40	-0.20
Customer Growth Assumption						
Single-Family Residential	0.5%	0.5%	0.5%	0.5%	0.5%	1.0%
Multi-Family Residential	0.5%	0.5%	0.5%	0.5%	0.5%	1.0%
Commercial	0.5%	0.5%	0.5%	0.5%	0.5%	1.0%
Irrigation	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Annual Consumption Projection - Three-Year (2011-13) Average (ccf/yr) less 10%						
Single-Family Residential	2,429,774	2,335,012	2,243,947	2,205,800	2,168,301	2,170,469
Multi-Family Residential	918,618	903,002	887,651	882,325	877,031	883,170
Commercial	424,406	407,854	396,434	389,695	383,070	384,602
Irrigation	736,620	671,798	627,459	599,851	573,458	566,577
Total	4,509,418	4,317,666	4,155,491	4,077,671	4,001,860	4,004,818
Annual Change		4.3%	3.8%	1.9%	1.9%	-0.1%
Cumulative Use Reduction		**4.3%**	**7.8%**	**9.6%**	**11.3%**	**11.2%**

1 - Estimated CPI assumption based on historical trends.

Commodity Demand Cost Allocations

The American Water Works Association (AWWA) recommends two primary methods to classify costs among various customers: (1) the Base-Extra Capacity method in which costs are allocated to the different customer classes proportionate to their use of the water system; and (2) the Commodity-Demand method in which costs are proportionately allocated to each customer class based on their peak demand. Although the two methods vary in the way that costs are allocated, both result in rates designed to recover the reasonable cost of service during periods of both average and peak demands.

The 2013 Water Rate Cost of Service Study used the commodity demand method for allocating system expenses among the customer classes. Although there is no single correct approach for allocating costs, this is a) a widely-accepted industry standard approach as detailed in the AWWA M1 Manual; b) the most commonly used approach in California rate-making; c) appropriate for the City's available data, and d) equitably apportions costs to the City's rate

components and customer classes.

The commodity demand method used is based on the AWWA M1 Manual and assigns costs to into four components: (a) commodity costs, (b) demand costs, (c) customer costs, and (d) direct fire-protection costs. *Commodity costs* typically vary with the quantity of water produced. Examples include chemicals, utilities, and water purchases (if bought on a unit volume basis). Commodity costs also include costs related to reservoirs and other costs that vary with average daily demand. *Demand costs* recover the costs of facilities needed to meet the peak use, or demands, placed on the system by each customer class. Demand costs include capital-related system costs designed to meet peak requirements and the associated operation and maintenance expenses. Examples include the water distribution pipeline system which is sized to meet peak demands. These costs can be further broken down into costs associated with meeting specific demands, such as maximum-month, maximum-day, excess maximum hour, or other periods of time that may be appropriate to the utility. *Customer costs* include the fixed costs associated with serving customers. These costs are incurred regardless of the amount of water a customer consumes. Examples include billing, meter reading, customer accounting and collecting expenses, and maintenance and capital costs for meters. *Direct fire-protection* costs comprise costs applied exclusively for fire protection. Examples include public fire hydrants and related mains and valves.

The 2014 Update uses cost allocations from the 2013 Water Rate Cost of Service Study to allocate costs. As shown on Table 11, commodity costs represent 60 percent of all expenses, demand costs account for 38 percent, and customer administrative costs comprise 2 percent. These allocations are the basis for how costs are assigned to the fixed and variable rate components (60 percent to variable and 40 percent to fixed) in the next section. Demand costs are recovered from the fixed charges. All customer classes are charged the same fixed charge based on meter size. Commodity costs are recovered from the consumption or variable charges.

Table 11. Commodity Demand Allocation: Total All Expenses

	2019/20 Est. Amount	Commodity %	Demand %	Cust Admin %	Total %	Commodity $	Demand $	Cust Admin $	Total $
City of Davis Water System Baseline Expenses									
Baseline Operating Expenses	$10,856,000	59%	37%	4%	100%	$6,419,000	$4,023,000	$432,000	$10,874,000
Fixed Assets and Local CIP Projects R&R (1)	3,000,000	59%	38%	3%	100%	1,781,000	1,129,000	90,000	$3,000,000
Subtotal	$13,856,000					$8,200,000	$5,152,000	$522,000	$13,874,000
Commodity-Demand Allocation						*59.0%*	*37.0%*	*4.0%*	*100.0%*
Davis' Share of Surface Water Project Expenses									
Surface Water Project Expenses	$13,146,000	60%	39%	1%	100%	$7,894,000	$5,181,000	$71,000	$13,146,000
Subtotal	$13,146,000					$7,894,000	$5,181,000	$71,000	$13,146,000
Commodity-Demand Allocation						*60.0%*	*39.0%*	*1.0%*	*100.0%*
Total All Expenses	**$27,002,000**					**$16,094,000**	**$10,333,000**	**$593,000**	**$27,020,000**
Total Commodity-Demand Allocation						***60.0%***	***38.0%***	***2.0%***	***100.0%***

1 - Based on average annual replacement projects = $3,000,000

Unit Costs of Service Components

In order to provide adequate service to its customers at all times, the water system must be capable of not only providing the average amount of water used, but also supplying water at peak or maximum rates of demand. Therefore, rates are designed to recover system expenses needed to provide both average and peak use. Under the commodity-demand cost allocation method, commodity costs are distributed to customer classes on the basis of total annual use. Demand-related costs are distributed to the various classes in proportion to the class total demand responsibility. Table 12 shows the allocation of the $13.2 million total 2013/14 base year revenue requirement to each average and peak demand with 60 percent of expenses are allocated to average (commodity) costs and 40 percent are allocated to peak month (demand) costs based on the Commodity Demand Allocation (Table 11). Peak demand is calculated by taking the highest use month over average annual use as shown on Table 4.

Table 12. 2013/14 Base Year Commodity and Demand Allocation

	% Allocated	Total
Total 2013/14 (Base Year) Revenue Requirement (Table 8)	100%	$13,200,000
Allocation to Average (Commodity) (Table 11)	60%	$7,920,000
Allocation to Peak (Demand) (Table 11)	40%	$5,280,000

To proportionately recover costs from each customer class, system expenses are allocated to each class based on their share of average and peaking impacts from Table 9. Table 13. 2013/14 Base Year Cost Allocation to Each Customer Class allocates the average (commodity) and demand (peak month) costs to each customer class based on their relative impacts on the water system.

Table 13. 2013/14 Base Year Cost Allocation to Each Customer Class (1)

Customer Class	Allocation to Average Costs		Allocation to Peaking		Total Allocation	
	$	%	$	%	$	%
Single Family Residential	$4,267,470	53.9%	$2,862,410	54.2%	$7,129,880	54.0%
Multi-Family Residential	$1,613,392	20.4%	$846,210	16.0%	$2,459,602	18.6%
Commercial	$745,395	9.4%	$446,993	8.5%	$1,192,387	9.0%
Irrigation	$1,293,744	16.3%	$1,124,387	21.3%	$2,418,131	18.3%
Total	$7,920,000	100.0%	$5,280,000	100.0%	$13,200,000	100.0%

1 - Numbers may not add due to rounding.

Fixed and Variable Cost Recovery

Table 14 allocates the "12 Month Rate Revenue Target" or the annual revenue requirement from Table 8 between the fixed and variable rate components. Based on the City Council's recommendation to encourage water conservation, water rates will be designed to recover 13 percent of rate revenues from the fixed charge and 87 percent of rate revenues from the variable charges.

The total revenue requirement is then allocated to each customer class based on the total allocation percentages from Table 13. As shown below, approximately 54 percent of the total costs are allocated to the single family residential class. Nearly 19 percent of costs are allocated to multi-family residential class. The irrigation class is responsible for about 18 percent of the total revenue requirement, and 9 percent is allocated to the commercial class.

Table 14. Revenue Requirement Allocation

		Base Year	2014 Rate Study				
		2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
TOTAL REVENUE REQUIREMENT (from Cash Flow)		$13,200,000	$15,048,000	$17,155,000	$19,557,000	$22,295,000	$24,302,000
ADMINISTRATIVE BILLING CHARGE - 2%		$264,000	$300,960	$343,100	$391,140	$445,900	$486,040
NET REVENUE REQUIREMENT LESS ADMIN CHARGE		$12,936,000	$14,747,040	$16,811,900	$19,165,860	$21,849,100	$23,815,960
FIXED METER CHARGE REVENUE REQUIREMENT		$1,452,000	$1,655,280	$1,887,050	$2,151,270	$2,452,450	$2,673,220
VARIABLE CHARGE REVENUE REQUIREMENT		$11,484,000	$13,091,760	$14,924,850	$17,014,590	$19,396,650	$21,142,740
TOTAL REVENUE REQUIREMENT (CHECK)		$12,936,000	$14,747,040	$16,811,900	$19,165,860	$21,849,100	$23,815,960
TOTAL REVENUE REQUIREMENT BY CLASS	**% of Total**						
Single-Family Residential	54.0%	$6,987,282	$7,965,502	$9,080,821	$10,352,294	$11,801,626	$12,864,011
Multi-Family Residential	18.6%	$2,410,410	$2,747,867	$3,132,619	$3,571,241	$4,071,218	$4,437,710
Commercial	9.0%	$1,168,540	$1,332,135	$1,518,659	$1,731,298	$1,973,681	$2,151,352
Irrigation	18.3%	$2,369,768	$2,701,536	$3,079,801	$3,511,027	$4,002,575	$4,362,887
Total	100.0%	$12,936,000	$14,747,040	$16,811,900	$19,165,860	$21,849,100	$23,815,960

Fixed/Readiness to Serve Charge

The fixed/readiness to serve charge recognizes the fact that even when a customer does not use any water, the City incurs fixed costs in connection with maintaining the ability or readiness to serve each connection. The fixed charge is based on meter size and is structured to recover a portion of the City's fixed costs of providing water service, including the water distribution system as well as a portion of the surface water rights. The charge also recovers the cost of customer service for meter reading and billing services. All customers, residential and non-residential, are charged a fixed charge based on their meter size. The fixed charge is comprised of three components: (1) a Water Meter Replacement Charge; (2) an Administrative Billing Charge, and (3) a Readiness to Service Charge.

Water Meter Replacement Charge

The 2013 Water Rate Cost of Service Study established a monthly meter replacement charge to fund a meter replacement program. Water meters often lose accuracy as they age and should be replaced approximately every 15 years. New meters are an investment in the system's infrastructure that will bring efficiency to meter reading and ensure accuracy of billing operations.

All customer classes pay the monthly water meter replacement charge based on meter size. The estimated cost of the annual meter replacement program has been updated as shown on Table 16.

Table 15. Water Meter Replacement Program Annual Cost Estimate

Meter Size	Average Useful Life (Yrs)	Est. Replacement Per Meter Cost (AMR) (1)	Est. Installation Cost (1)	Total Est Replacement Cost	Annual Cost	Monthly Cost (2)	Number of Meters	2013/14 Annual Amount
3/4-in	15	$180	$135	$315	$21.00	$1.75	12,200	$256,193
1-in	15	$290	$175	$465	$31.00	$2.58	3,453	$106,915
1-1/2-in	15	$467	$195	$662	$44.13	$3.68	369	$16,280
2-in	15	$908	$235	$1,143	$76.20	$6.35	161	$12,243
3-in	15	$1,012	$280	$1,292	$86.13	$7.18	336	$28,978
4-in	15	$1,415	$340	$1,755	$117.00	$9.75	41	$4,797
6-in	15	$2,044	$440	$2,484	$165.60	$13.80	3	$497
8-in	15	$2,580	$550	$3,130	$208.67	$17.39	4	$835
							16,567	$426,738

1 - Source: BWA Estimates.
2 - Monthly cost per meter is escalated by 3% annually beginning in 2014/15.

The water meter replacement charge is escalated by 3 percent based on estimated inflation beginning in fiscal year 2014/15. The monthly meter replacement charges through fiscal year 2017/18 are listed on Table 16.

Table 16. Monthly Meter Replacement Charge

	Base Year	2014 Rate Study				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Annual Escalation (1)		3%	3%	3%	3%	3%
Meter Size						
3/4-in	$1.75	$1.80	$1.85	$1.91	$1.97	$2.03
1-in	$2.58	$2.66	$2.74	$2.82	$2.90	$2.99
1-1/2-in	$3.68	$3.79	$3.90	$4.02	$4.14	$4.26
2-in	$6.35	$6.54	$6.74	$6.94	$7.15	$7.36
3-in	$7.18	$7.40	$7.62	$7.85	$8.09	$8.33
4-in	$9.75	$10.04	$10.34	$10.65	$10.97	$11.30
6-in	$13.80	$14.21	$14.64	$15.08	$15.53	$16.00
8-in	$17.39	$17.91	$18.45	$19.00	$19.57	$20.16

1 - Monthly cost per meter is escalated by 3% annually beginning in 2014/15.

Administrative Billing Charge

Administrative costs associated with customer service and billing are estimated to account for approximately 2 percent of the total revenue requirement expenses. These costs are incurred irrespective of the amount of water consumed, and are therefore called out separately and billed as a fixed cost component. The costs associated with administrative and billing expenses have been updated in Table 17.

Table 17. Monthly Administrative Billing Charge

	Base Year	2014 Rate Study				
	2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
Annual Admin/Billing Expenses (1)	$264,000	$300,960	$343,100	$391,140	$445,900	$486,040
Number of Meters						
3/4-in	12,200	12,261	12,384	12,508	12,633	12,759
1-in	3,453	3,471	3,506	3,541	3,576	3,612
1-1/2-in	369	371	375	379	383	387
2-in	161	161	163	165	167	169
3-in	336	338	341	344	347	350
4-in	41	41	41	41	41	41
6-in	3	3	3	3	3	3
8-in	4	4	4	4	4	4
Total Number of Meters	16,567	16,650	16,817	16,985	17,154	17,325
Growth %	0.5%	0.5%	1.0%	1.0%	1.0%	1.0%
Growth (# of units)		83	167	168	169	171
Monthly Admininstrative Charge per Acct	**$1.33**	**$1.51**	**$1.70**	**$1.92**	**$2.17**	**$2.34**
% Change		*13.5%*	*12.6%*	*12.9%*	*13.0%*	*7.8%*
1 - Estimated at 2% of total annual revenue requirement						

Readiness to Serve Charge

The fixed meter/readiness to serve charges are designed to recover costs from each meter proportion to meter capacity and the associated demand placed on the water system by each meter size. The fixed meter/readiness to serve charges are calculated by multiplying a) the annual revenue requirement by b) the percentage of costs allocated for fixed charge revenue recovery from Table 14. This funding target is then divided by c) the total number of projected meter equivalents the City will serve each year in order to determine d) the fixed charge per meter equivalent. A meter equivalent represents the capacity of a base 3/4-inch meter. Larger meters are converted into meter equivalents in order to determine a common underlying fixed charge that can be applied to the capacity of each meter size. Table 18 shows the rate derivation for the fixed meter/readiness to serve charge.

Table 18. Fixed Meter/Readiness to Serve Charge Rate Derivation

			Base Year	2014 Rate Study				
			2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
TOTAL FIXED METER/READINESS TO SERVE REVENUE REQUIREMENT			$1,452,000	$1,655,280	$1,887,050	$2,151,270	$2,452,450	$2,673,220
Total 3/4" Meter Equivalents			24,636	24,756	24,863	25,110	25,359	25,609
Monthly Charge per 3/4" Meter			$4.91	$5.57	$6.32	$7.14	$8.06	$8.70
PROPOSED FIXED METER CHARGES								
Meter Size	**Equivalent Factor**	**Total Equiv. Meters**						
3/4-in	1.00	12,200	$4.91	$5.57	$6.32	$7.14	$8.06	$8.70
1-in	1.67	5,767	$8.20	$9.31	$10.56	$11.92	$13.46	$14.53
1-1/2-in	3.33	1,228	$16.36	$18.55	$21.06	$23.77	$26.84	$28.97
2-in	5.33	856	$26.18	$29.70	$33.71	$38.05	$42.96	$46.36
3-in	10.67	3,589	$52.41	$59.45	$67.49	$76.18	$85.99	$92.82
4-in	16.67	683	$81.87	$92.88	$105.43	$119.02	$134.35	$145.01
6-in	33.33	100	$163.70	$185.71	$210.81	$237.96	$268.61	$289.93
8-in	53.33	213	$261.93	$297.15	$337.30	$380.75	$429.79	$463.91
Total		24,636						
FIXED METER CHARGE PROJECTED REVENUE BY CLASS								
Single-Family Residential		17,461	$1,028,836	$1,173,148	$1,337,347	$1,525,798	$1,740,055	$1,897,278
Multi-Family Residential		2,283	$134,560	$152,909	$173,682	$198,083	$225,910	$246,312
Commercial		2,662	$156,911	$179,220	$204,684	$233,220	$265,743	$289,590
Irrigation		2,230	$131,429	$150,013	$170,657	$194,207	$221,020	$240,479
Total		24,636	$1,451,737	$1,655,290	$1,886,370	$2,151,307	$2,452,727	$2,673,659

Variable Charge

The variable charge is based on a customer's consumption for a billing period. The charge is structured to recover all water expenses that vary with water use, a portion of the fixed costs of the utility, pumping water, a portion of the surface water rights, managing the City's water resources, deterring water waste, and encouraging efficient water use. The variable charge is a uniform rate per unit based on customer class.

Revenue requirements from variable rates are calculated by subtracting a) the projected fixed meter charge revenue by customer class as shown in Table 18 from b) the total revenue requirement by class from Table 14 to derive a (c) total variable charge requirement by class in Table 19. This funding target is divided by c) the total volume of projected annual water sales by class to calculate d) a rate per unit of metered water use for each customer class also known as a raw variable charge. The raw variable charges are then multiplied by (e) the total cumulative use reduction percentages from Table 10 to derive the (f) variable charges for each customer class that have been adjusted for elasticity. The derivation of the variable charges is shown on Table 19.

Table 19. Variable Charge Derivation

		Base Year	2014 Rate Study				
		2013/14	2014/15	2015/16	2016/17	2017/18	2018/19
TOTAL VARIABLE CHARGE REVENUE REQUIREMENT BY CLASS							
Single-Family Residential		$5,958,446	$6,792,354	$7,743,473	$8,826,496	$10,061,571	$10,966,733
Multi-Family Residential		$2,275,850	$2,594,958	$2,958,938	$3,373,158	$3,845,309	$4,191,399
Commercial		$1,011,628	$1,152,915	$1,313,975	$1,498,077	$1,707,939	$1,861,762
Irrigation		$2,238,339	$2,551,523	$2,909,144	$3,316,820	$3,781,555	$4,122,408
Total		$11,484,263	$13,091,750	$14,925,530	$17,014,553	$19,396,373	$21,142,301
RAW VARIABLE CHARGES BY CUSTOMER CLASS	**3-Year Avg less 10%**						
Single-Family Residential	2,429,774	$2.45	$2.80	$3.19	$3.63	$4.14	$4.51
Multi-Family Residential	918,618	$2.48	$2.82	$3.22	$3.67	$4.19	$4.56
Commercial	424,406	$2.38	$2.72	$3.10	$3.53	$4.02	$4.39
Irrigation	736,620	$3.04	$3.46	$3.95	$4.50	$5.13	$5.60
Total	4,509,418						
VARIABLE CHARGES BY CUSTOMER CLASS ADJUSTED FOR CONSERVATION							
Estimated Conservation (Cumulative Use Reduction from Table 9)			4.3%	7.8%	9.6%	11.3%	11.2%
Single-Family Residential		$2.45	$2.92	$3.44	$3.98	$4.61	$5.01
Multi-Family Residential		$2.48	$2.94	$3.47	$4.02	$4.66	$5.07
Commercial		$2.38	$2.84	$3.34	$3.87	$4.47	$4.88
Irrigation		$3.04	$3.61	$4.26	$4.93	$5.71	$6.23

Proposed Rates

Table 20 summarizes the proposed rates for the 13% Fixed / 87% Variable rate structure. The following table shows a 5-year schedule of proposed water rates incorporating a) the overall level of required rate increases to fund the City's costs of providing service, b) the proposed rate structure adjustments, and c) the revenue recovery allocations that fairly apportion costs to City customers. The first rate increase is scheduled to become effective November 1, 2014. Subsequent rate increases are scheduled to become effective each January 1 beginning in 2016 when water use is low.

Table 20. Proposed Rates

13% FIXED/87% VARIABLE, UNIFORM TIER BY CLASS					
	PROPOSED				
	1-Nov-14	1-Jan-16	1-Jan-17	1-Jan-18	1-Jan-19
Meter Replacement					
3/4"	$1.80	$1.85	$1.91	$1.97	$2.03
1"	$2.66	$2.74	$2.82	$2.90	$2.99
1-1/2"	$3.79	$3.90	$4.02	$4.14	$4.26
2"	$6.54	$6.74	$6.94	$7.15	$7.36
3"	$7.40	$7.62	$7.85	$8.09	$8.33
4"	$10.04	$10.34	$10.65	$10.97	$11.30
6"	$14.21	$14.64	$15.08	$15.53	$16.00
8"	$17.91	$18.45	$19.00	$19.57	$20.16
Admin/Billing Charge					
All	$1.51	$1.70	$1.92	$2.17	$2.34
Readiness to Serve					
3/4"	$5.57	$6.32	$7.14	$8.06	$8.70
1"	$9.31	$10.56	$11.92	$13.46	$14.53
1-1/2"	$18.55	$21.06	$23.77	$26.84	$28.97
2"	$29.70	$33.71	$38.05	$42.96	$46.36
3"	$59.45	$67.49	$76.18	$85.99	$92.82
4"	$92.88	$105.43	$119.02	$134.35	$145.01
6"	$185.71	$210.81	$237.96	$268.61	$289.93
8"	$297.15	$337.30	$380.75	$429.79	$463.91
TOTAL MONTHLY FIXED/READINESS TO SERVE CHARGE					
3/4"	$8.88	$9.87	$10.97	$12.20	$13.07
1"	$13.48	$15.00	$16.66	$18.53	$19.86
1-1/2"	$23.85	$26.66	$29.71	$33.15	$35.57
2"	$37.75	$42.15	$46.91	$52.28	$56.06
3"	$68.36	$76.81	$85.95	$96.25	$103.49
4"	$104.43	$117.47	$131.59	$147.49	$158.65
6"	$201.43	$227.15	$254.96	$286.31	$308.27
8"	$316.57	$357.45	$401.67	$451.53	$486.41
VARIABLE CHARGES					
SFR Rate ($/ccf)	$2.92	$3.44	$3.98	$4.61	$5.01
MFR Rate ($/ccf)	$2.94	$3.47	$4.02	$4.66	$5.07
Comm Rate ($/ccf)	$2.84	$3.34	$3.87	$4.47	$4.88
Irrig Rate ($/ccf)	$3.61	$4.26	$4.93	$5.71	$6.23

Water Rate Impacts

Table 21 shows the impacts of the proposed water rates on a sample of customer profiles. 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 21. Sample Water Bill Impacts

	Meter Size	Monthly Use	Current 1-Jan-14	Proposed 1-Nov-14	1-Jan-16	1-Jan-17	1-Jan-18	1-Jan-19
Single Family Residential								
Low Use	3/4"	6	$28.86	$26.40	$30.51	$34.85	$39.86	$43.13
Median Use	3/4"	11	$36.51	$41.00	$47.71	$54.75	$62.91	$68.18
High Use	3/4"	29	$65.81	$93.56	$109.63	$126.39	$145.89	$158.36
Multi-Family Residential								
Small Apartment Building, 39 units	2"	147	$422.08	$469.93	$552.24	$637.85	$737.30	$801.35
Large Apartment Building, 124 units	4"	408	$1,189.34	$1,303.95	$1,533.23	$1,771.75	$2,048.77	$2,227.21
Commercial								
Drug Store	1-1/2"	41	$135.18	$140.29	$163.60	$188.38	$216.42	$235.65
Medical Clinic	2"	57	$199.39	$199.63	$232.53	$267.50	$307.07	$334.22
Dentist	3"	81	$329.44	$298.40	$347.35	$399.42	$458.32	$498.77
Business Complex	4"	163	$580.23	$567.35	$661.89	$762.40	$876.10	$954.09
Irrigation								
Small City Irrigation	2"	59	$266.85	$250.74	$293.49	$337.78	$389.17	$423.63
Large City Irrigation/School District	4"	1,176	$3,744.62	$4,349.79	$5,127.23	$5,929.27	$6,862.45	$7,485.13

Proposed Drought Surcharge

The City currently has not declared any mandatory reduction levels; however, after three consecutive years of below-normal rainfall, California is facing a severe drought emergency. On January 17, 2014, Governor Jerry Brown declared a State of Emergency and called for Californians to decrease water use by 20 percent voluntarily and mandatory rationing could be proclaimed in their near future. State officials were also directed to take all actions necessary to prepare for existing drought conditions and their impact on water supplies in California. The amount of water available for consumption by customers can be affected by climatic and other environmental conditions, such as the current drought. In such instances, it may become necessary for the City to implement water conservation measures and to establish a surcharge on the rates (water shortage surcharge) for its water service fees.

Drought rates are designed to recover revenue shortfalls as well as to achieve a targeted reduction in water consumption. Water agencies have many fixed expenses that must be paid regardless of the amount of water that is used. During times of drought, a water utility has two core objectives: 1) to reduce the amount of water customers consume, and 2) to maintain an adequate amount of revenue to fund the costs of providing service. The two competing objectives work against each other because as less water is sold the more difficult it is to maintain adequate revenue to cover an agency's operating costs. Agencies can combat lost revenue by using reserves (typically a rate stabilization fund) and by implementing drought rates.

Water Shortage Contingency Plan

The City has developed a four-stage water shortage contingency plan that may be invoked during declared water shortages. The Water Shortage Contingency Plan is detailed in Section 8, Table 8-1 of the 2010 Urban Water Management Plan ("2010 UWMP") and is shown in the table below. The plan includes voluntary and mandatory goals for reductions in water use, depending on the causes, severity, and anticipated duration of the water supply shortage. Stage 2 may become mandatory in the future by regulatory or legislative action by the State or by the City Council.

Table 8-1. Water Shortage Contingency – Rationing Stages to Address Water Supply Shortages (DWR Table 35)

Stage	Interim groundwater level trigger (feet below ground surface)	Demand reduction goal	Current per capita target, gpcd	Per capita target based on normal of 167 gpcd
1	-100	10% Voluntary	207	150
2	-120	20% Voluntary	185	134
3	-130	30% Drought Rates/Mandatory	161	117
4	-140	50% or > Drought Rates/Mandatory	115	84

In response to the Governor's declaration of a State water emergency and in anticipation of possible mandatory reductions, the drought surcharges are developed for Stages 2 through 4, ranging from 20 to 50 percent of overall reduction. The drought surcharges would only be implemented during mandatory restriction declarations by the City Council. If the mandatory reduction in water use falls between two blocks, the rates are pro-rated accordingly.

The drought surcharge is a percent increase levied on all water consumption and would only be applied to the variable charge. The City recognizes that ratepayers are already doing their part

to conserve. Therefore, applying the drought surcharge to only the variable charge component gives customers the increased ability to control a portion of their water bills. The drought surcharge percentage increase is calculated on Table 22.

Table 22. Drought Surcharge Percentage Increase Calculation

Stage 2: 20% Reduction				
$\frac{1}{1 - 20\%}$	=	$\frac{1}{0.8}$	=	1.25

Stage 3: 30% Reduction				
$\frac{1}{1 - 30\%}$	=	$\frac{1}{0.7}$	=	1.43

Stage 4: 50% Reduction				
$\frac{1}{1 - 50\%}$	=	$\frac{1}{0.5}$	=	2.00

Table 23 shows the additional drought surcharge percentage increases for each stage of drought. In the event of a declared mandatory reduction in water use, the City may implement the water shortage surcharges up to the maximum percentages set forth in Table 23.

Table 23. Proposed 2014/15 Drought Surcharge - Projected Reduced Consumption

	Stage 2	Stage 3	Stage 4
Reduction Target	**20%**	**30%**	**50% or Greater**
Additional Surcharge	25%	43%	100%

For example, if a Stage 2 water shortage is declared with mandatory water use reductions imposed for that stage (up to 20% reduction) then there will be an additional, up to 25%, surcharge imposed on the then current rate for water meter charge. For example, if a median usage (11 ccf/month) single family customer achieved a 20% reduction, that customer's usage would be reduced to approximately 9 ccf/month. A sample calculation of a 2014/15 bill with the surcharge for a single family customer based on a 9 ccf/month usage is below:

Sample Calculation of a 2014/15 Monthly Single Family Residential Bill

	Meter Size	Monthly Usage (ccf)	Fixed Charge		Variable Charge		Total Monthly Bill
Nov 1, 2014 Water Rates	3/4"	11	$8.88	+	($2.92 x 11 ccf) = $32.12	=	$41.00
Nov 1, 2014 Water Rates with Drought Surcharge	3/4"	9	$8.88	+	($2.92 x 1.25 x 9ccf) = $40.15	=	$41.73

It is important to emphasize that drought rates alone will not achieve the desired reduction levels amongst customers. The City will also need to implement a considerable outreach and education campaign to encourage water conservation. If the drought conditions persists or becomes more severe, the City may also have to consider enforcement penalties or fines and other options to considerably decrease water use.