



Memo

To: Board of Directors
From: Karl B. Drew
Date: October 14, 2016
Subject: Draft Water Rate Study

During the process of preparing a proposal for a water rate increase, we have reviewed several areas. These areas include an analysis of water consumption use patterns of the water users and a review of the Operating Income/(Losses) of the District.

Background

Crestline Village Water District was formed in 1954 to serve water to the Crestline area. In 1979, the Lake Gregory area was annexed into the District. Over the years, several smaller areas served by mutual water companies or homeowner associations around the Crestline – Lake Gregory area have been annexed into the District at the request of the property owners. The District currently has 4,952 active services.

In 1991, the District adopted its current rate structure and began billing customers on a monthly billing cycle in response to the drought that was occurring at that time and concerns about the supplemental water supply available from the State Water Project. While there have been adjustments to the rates and the basic water allocations over the years, the basic structure remains the same as was established in 1991. The rate structure includes a "Monthly Minimum Charge" and a two-tiered consumption rate table consisting of the "Basic Allocation Rate" and the "Excess Consumption Rate".

The "Monthly Minimum Charge" is a monthly charge based on the water service meter size. The "Basic Allocation Rate" is the rate that is charged for the "Basic Allocation" water used and the "Excess Consumption Rate" is the rate charged for water consumed in excess of the Basic Allocation. The Basic Allocation is set at 1,300 cubic feet for a 30-day period for a family size of 6 persons or less. There are provisions to adjust the Basic Allocation for individual water services based on larger family sizes, medical reasons and economic hardship.

The District's Water Conservation Program established in 1991 determines the Basic Allocation amount and the Excess Consumption Rate. As the District determines that stricter water conservation is necessary and enters a different phase of water conservation, the Basic Allocation is decreased and the Excess Consumption Rate is increased based on the provisions of the Program. The Board of Directors sets the Monthly Minimum Charge and the Basic Allocation Rate. The Excess Consumption Rate is determined by the provisions of the Water Conservation Program.

Consumption Analysis (See Exhibit A)

This analysis (Exhibit A) shows the number of services and how much water was used at various water usage levels over the past 12 months. It breaks down the consumption usage by Commercial, Industrial and Institutional (CII) accounts and Residential accounts. The CII accounts are basically the business and public agency accounts. The Residential accounts includes single family and multi-unit residential accounts. This analysis also gives information on the accounts which have a 92325 zip code for billing purposes. We use this information to determine our full time population.

Overall, 96% of our customers stayed within the Basic Allocation of 1,300 cubic feet for a 30-day period. 88.6% used 800 cubic feet or less, and 24% used no water during a billing period. The average monthly water consumption per water service is 537 cubic feet.

96% of the total water accounts are Residential accounts and they use 87% of the total water sold. 55% of the total accounts are local Residential accounts. These local Residential accounts use 67.7% of the total water sold.

Operating Income/(Losses) (See Exhibit B)

The District is a single purpose district in that it provides only water service to its service area. The Operating Income/(Losses) is an accounting of the actual revenues and expenses related to providing water service to our water users. The District does have some Non-Operating Revenues that are used for debt service and to supplement the District's Capital Improvement/Replacement Program. Currently, the District is debt free, as it has no outstanding loans or bonds.

The District's last rate increase was adopted in May 2004, with an effective date of July 2004. With this rate increase, the Monthly Minimum Charge was increased \$2.00 and the Basic Allocation Rate was increased by \$0.45 per 100 cubic feet (ccf). The current Monthly Minimum Charge for a water service with a 5/8" x 3/4" meter is \$17.50. The Basic Allocation Rate is \$4.20 per ccf and the Excess Consumption Rate is \$6.30 per ccf.

In May 2013, the District also decreased the Monthly Minimum Charge for the Lake Gregory customers by \$4.50. In 1979, the Board of Directors had added \$4.50 to the Monthly Minimum Charge for the water services in the Lake Gregory area to pay for the required capital improvements in that area. By May 2013, all the improvements were completed and all associated debt was paid off.

In 2008-09, the District began experiencing Net Operating Losses and began discussing increases to the District's water rates. Due to the economic recession that had begun and which was affecting many of the District's property owners and water users, the decision was made to not increase the water rates, but to make do with the existing revenues. During the ensuing years, the District has experienced a decrease in the number of full-time residents, decreased water usage and increasing expenses.

For the fiscal year ending April 30, 2015, the District had a Net Operating Loss of \$804,394. The unaudited Net Operating Loss for the fiscal year ending April 30, 2016 is \$958,096.

By removing Depreciation, which is used to provide funds for the capital replacement program, the Net Operating Loss Before Depreciation for 2014-15 is \$200,639 and \$343,586 for 2015-16.

Fixed Expenses/Variable Expenses (See Exhibit C): This analysis compares the variable and fixed operating costs. Fixed costs are those costs that are associated with the cost of the District maintaining

the water system and keeping it ready to supply water to all active water services. Variable costs are those costs associated with producing the necessary amount of water which is used in the water system.

The data used for this analysis is from the audit report for the year ending April 30, 2015. The identified variable costs are \$606,010 and the fixed costs are \$2,512,279, with a total operating cost of \$3,118,289.

Fixed costs are calculated to be \$42.30 per active water service and variable costs are \$2.08 per 100 cubic feet (CCF).

Water Rate Comparison (See Exhibit D)

The Water Rate Comparison was completed in October 2016. It compares the water rates of various water districts and mutual water companies across the San Bernardino Mountains. While this data is not used in determining water rates, it does indicate how the District's rate compare to other water utilities in the same geographical area. When looking at monthly water consumption at 500 cubic feet or less, the District's water rates generate the 2nd to the lowest bills for a 5/8" x 3/4" meter size. At 800 cubic feet to 1,300 cubic feet of monthly water consumption, the District ranks 6th out of the 12 service areas surveyed.

Findings

- Rate increases should focus on the area of the Monthly Minimum Charge.
- A minimum increase of \$69.38 per year per service (\$5.78 per month) is required to eliminate the Net Operating Loss before Depreciation. This level of increase would not provide any funding for the capital improvements/replacement program.

An increase of \$193.48 per year per service (\$16.12 per month) is required to eliminate the Net Operating Loss incurred in fiscal year 2015-16.

These amounts do not provide for increases in future costs.

Recommendations

It is the Ad Hoc Water Rates Committee's recommendation that the District pursue an \$8.00 per month increase to the Monthly Minimum Charge. This would be a \$96 per year increase for each active water service and provide the necessary revenues to eliminate the Net Operating Loss before Depreciation.

The should review its water rates annually and establish a long term plan to build the necessary reserves for required capital improvements.

Exhibit A

Consumption Analysis
For Year Ending 08/31/16

All Accounts									With 9232	25 Zip Code		
Consumption Level	12 Mont	h Average	<u>% of</u>	<u>Total</u>	% of All Accounts		12 Month Average		% of Total		% of All Accounts	
In Cubic Feet	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption
0	1,210	-	24.4%	0.0%			190	-	6.7%	0.0%		
1-200	1,133	161,741	22.9%	7.7%			565	87,930	20.0%	5.8%		
201-400	917	318,572	18.5%	15.1%			713	248,875	25.2%	16.4%		
401-600	714	387,333	14.4%	18.3%			595	322,617	21.0%	21.2%		
601-700	234	163,084	4.7%	7.7%			193	134,612	6.8%	8.9%		
701-800	181	144,361	3.7%	6.8%			149	119,714	5.3%	7.9%		
801-900	130	117,202	2.6%	5.6%			109	97,803	3.8%	6.4%		
901-1000	95	94,701	1.9%	4.5%			77	76,708	2.7%	5.1%		
1001-1100	66	73,122	1.3%	3.5%			54	59,661	1.9%	3.9%		
1101-1200	50	59,678	1.0%	2.8%			38	46,300	1.3%	3.1%		
1201-1300	41	53,382	0.8%	2.5%			34	43,848	1.2%	2.9%		
1301+	185	539,150	3.7%	25.5%			116	282,128	4.1%	18.6%		
_												
Total	4,953	2,112,324	100.0%	100.0%	100.09	6 100.0%	2,830	1,520,194	100.0%	100.0%	57.19	6 72.0%

CII Accounts (Commercial, Industrial and Institutional)								With 9232	25 Zip Code			
Consumption Level	12 Mont	h Average	verage % of Total		% of All Accounts		12 Month Average		% of Total		% of All Accounts	
In Cubic Feet	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption	<u>Services</u>	Consumption
0	40	-	21.7%	0.0%			17	-	17.4%	0.0%		
1-200	42	5,688	22.6%	2.1%			25	3,560	26.3%	4.0%		
201-400	17	5,885	9.2%	2.2%			10	3,418	10.0%	3.8%		
401-600	16	8,566	8.7%	3.2%			10	5,466	10.0%	6.1%		
601-700	7	4,433	3.5%	1.7%			5	3,150	5.3%	3.5%		
701-800	7	4,400	3.5%	1.7%			4	2,800	4.2%	3.1%		
801-900	3	2,775	1.6%	1.0%			2	1,425	2.1%	1.6%		
901-1000	4	3,416	1.9%	1.3%			3	2,083	2.6%	2.3%		
1001-1100	4	3,758	1.9%	1.4%			3	2,016	2.6%	2.2%		
1101-1200	3	2,800	1.6%	1.1%			2	1,700	2.1%	1.9%		
1201-1300	3	3,141	1.6%	1.2%			2	1,841	1.6%	2.1%		
1301+	41	222,524	22.0%	83.2%			15	62,542	15.8%	69.5%		
Total	184	267,385	100.0%	100.0%	3.79	6 12.7%	95	89,999	100.0%	100.0%	1.99	6 4.3%

Consumption Analysis
For Year Ending 08/31/16

Exhibit A

All Residential Accounts With 92325 Zip Code Consumption Level 12 Month Average % of Total % of All Accounts 12 Month Average % of Total % of All Accounts In <u>Cubic Feet</u> Services Consumption Consumption Services Consumption Consumption Services Consumption Services Consumption Services Services 1,169 24.5% 0.0% 173 6.3% 0.0% 1-200 1,092 156,052 22.9% 8.5% 539 84,370 19.7% 5.9% 201-400 312,687 18.9% 17.0% 245,456 25.7% 17.2% 900 704 401-600 699 378,766 20.5% 317,150 22.2% 14.7% 584 21.4% 601-700 9.2% 228 158,651 4.8% 8.6% 188 131,462 6.9% 701-800 175 139,962 3.7% 7.6% 146 116,914 5.3% 8.2% 801-900 127 114,427 2.7% 6.2% 107 96,378 3.9% 6.7% 901-1000 91 91,284 1.9% 5.0% 75 74,624 2.7% 5.2% 1001-1100 63 69,364 1.3% 3.8% 52 57,645 1.9% 4.0% 1101-1200 47 56,878 1.0% 3.1% 37 44,600 1.4% 3.1% 1201-1300 39 50,240 0.8% 2.7% 32 42,006 1.2% 2.9% 1301+ 143 316,625 3.0% 17.2% 100 219,586 3.6% 15.4% Total 4,769 1,844,932 100.0% 100.0% 96.3% 87.3% 2,735 1,430,188 100.0% 100.0% 55.2% 67.7%

10/12/2016

Background Information 10/10/16

Exhibit B

Recent Rate Change History Change

Monthly Usage per Charge 100 cf

 Last District Wide Rate Increase
 7/1/2004 \$ 2.00 \$ 0.45 Adopted May 25, 2004

 Lake Gregory Rate Equalization
 7/1/2013 \$ (4.50) \$ - Adopted May 21, 2013

WATER RATE SCHEDULE - Current

Water Conservation Program - Phase I.a water conservation measures in effect

Monthly Minimum Charge:

	<u>Monthly</u>
	<u>Minimum</u>
Meter Size	<u>Charge</u>
5/8 x 3/4 inch meter *	\$17.50
3/4 inch meter	18.50
1 inch meter	19.50
1 inch meter (Residential Fire Service)	21.75
1 1/2 inch meter	23.50
2 inch meter	28.50
3 inch meter	34.50

^{*} The most common size of water meter for residential water accounts is 5/8 x 3/4 inch.

Quantity Rates:

Basic Allocation Rate - 0 to 1300 cubic feet \$4.20 per 100 cubic feet Excess Consumption Rate - 1301+ cubic feet \$6.30 per 100 cubic feet

The quantity rates are based on a 30 day billing period. If the actual billing period is longer or shorter than 30 days, the quantity limits are prorated accordingly.

Effect of Change to Monthly Charge		Proposed	Inc	crease	Equal Increase Each Year							
	Pe	r Month	Р	er Year	Yea	r 1 Income	Yea	ır 2 Income	Ye	ar 3 Income	Yea	ar 4 Income
Number of Active Water Services						4,952						
	•	4.00	•	40.00	•	50.404	•	110010	•	470.070	•	007.000
	\$	1.00	\$	12.00	\$	59,424	\$	118,848	\$	178,272	\$	237,696
		2.00		24.00		118,848		237,696		356,544		475,392
		2.50		30.00		148,560		297,120		445,680		594,240
		3.00		36.00		178,272		356,544		534,816		713,088
		4.00		48.00		237,696		475,392		713,088		950,784
		4.50		54.00		267,408		534,816		802,224		1,069,632
		5.00		60.00		297,120		594,240		891,360		1,188,480
		6.00		72.00		356,544		713,088		1,069,632		1,426,176
		7.00		84.00		415,968		831,936		1,247,904		1,663,872
		8.00		96.00		475,392		950,784		1,426,176		1,901,568
		9.00		108.00		534,816		1,069,632		1,604,448		2,139,264
		10.00		120.00		594,240		1,188,480		1,782,720		2,376,960
		11.00		132.00		653,664		1,307,328		1,960,992		2,614,656
		12.00		144.00		713,088		1,426,176		2,139,264		2,852,352
Existing Rate for 5/8" x 3/4" Meter:		17.50		210.00	1	1,039,920						

Background Information 10/10/16

Exhibit B

Review Of Operating Income/(Loss) - Audited

Fiscal Year	Operating Income	Operating Expenses	Net Income/ (Loss)	Depreciation	Net Income/ (Loss) Before Depreciation	
2003-04:	\$ 2,596,706	\$ 2,639,098	\$ (42,392)	\$ 568,366	\$ 525,974	
2004-05: Rate Change	2,827,934	2,663,003	164,931	578,449	743,380	
2005-06:	2,766,016	2,250,783	515,233	572,369	1,087,602	
2006-07:	2,931,152	2,488,604	442,548	574,874	1,017,422	
2007-08:	2,834,837	3,371,635	(536,798)	554,457	17,659	
2008-09:	2,748,034	2,805,235	(57,201)	574,005	516,804	
2009-10:	2,669,472	2,910,921	(241,449)	562,884	321,435	
2010-11:	2,571,854	2,776,312	(204,458)	562,896	358,438	
2011-12:	2,497,385	2,799,237	(301,852)	575,220	273,368	
2012-13:	2,581,852	2,889,764	(307,912)	596,176	288,264	
2013-14:	2,418,899	3,080,677	(661,778)	590,728	(71,050)	
2014-15:	2,313,895	3,118,289	(804,394)	603,755	(200,639)	
2015-16: Unaudited	2,174,202	3,132,298	(958,096)	614,510	(343,586)	Audit In Proce
Total from 2005 to 2016			(3,116,157)	6,381,874	3,265,717	
Average for 11 Years			(283,287)	580,170	296,883	

% Change From Prior Year	Operating Income	Operating Expenses
2003-04:		
2004-05: Rate Change	8.18%	0.90%
2005-06:	-2.24%	-18.31%
2006-07:	5.63%	9.56%
2007-08:	-3.40%	26.19%
2008-09:	-3.16%	-20.19%
2009-10:	-2.94%	3.63%
2010-11:	-3.80%	-4.85%
2011-12:	-2.98%	0.82%
2012-13:	3.27%	3.13%
2013-14:	-6.74%	6.20%
2014-15:	-4.54%	1.21%
2015-16: Unaudited	-6.43%	0.45%
Total Change from 2005 to 2016	-27.31%	7.83%
11 Year Average Annual Change	-2.48%	0.71%

Change in Water Sales (Includes Monthly Charge and Consumption Charges)

Gridings in Trater Cares (includes incl	ung onango am	a concampino	G.i.a. goo,
Fiscal Year	Water Sales	Change	% Change
2003-04:	\$ 2,554,115		
2004-05: Rate Change	2,793,707	239,592	8.58%
2005-06:	2,731,254	(62,453)	-2.29%
2006-07:	2,834,528	103,274	3.64%
2007-08:	2,742,754	(91,774)	-3.35%
2008-09:	2,649,380	(93,374)	-3.52%
2009-10:	2,576,168	(73,212)	-2.84%
2010-11:	2,478,313	(97,855)	-3.95%
2011-12:	2,411,144	(67,169)	-2.79%
2012-13:	2,497,114	85,970	3.44%
2013-14:	2,338,203	(158,911)	-6.80%
2014-15:	2,238,572	(99,631)	-4.45%
2015-16: Unaudited	2,094,227	(144,345)	-6.89%
Total Change from 2005 to 2016		(699,480)	-29.79%
11 Year Average Annual Change		(63,589)	-2.71%

Operating Costs Analysis For Year Ending 04/30/15

Exhibit C

10/12/2016

Total Operating Expenses \$ 3,118,289

Talliano Emponioso							
Source of Supply	Total		Wells	Purc	chased		Shared
Purchased Water	\$ 453,320			4	453,320		
Other	69,020						69,020
Pumping	66,496		66,496				
Water Treatment	17,174						69,020
Total Variable Expenses	\$ 606,010		66,496	4	453,320		138,040
Water Production - 100 CF (CCF)	291,084		119,375		171,709		
Cost per CCF	231,004	\$	0.56		2.64	ç	0.47
•		Ą	0.50	Ą	2.04	۲	0.47
Shared Cost per CCF			0.47		0.47		
Total Incremental Cost per CCF			1.03		3.11	_	
Average Cost per CCF	\$ 2.08			•		_	

Fixed Expenses\$ 2,512,279Average Per Service Cost (4,949 Service)507.63Average Monthly Per Service Cost\$ 42.30

Mountain Area Water Rate Comparison

DISTRICT	Monthly Minimum Charge – By Meter Size								
	5/8"	3/4"	1"	1" Fire	1 ½"	2"	3"		
Alpine Water Users Association	22.50		28.50		34.50	34.50	46.50		
Arrowbear Park County Wtr Dist*	24.50								
Big Bear City CSD	34.89	34.89	34.89						
Big Bear Lake Water & Power**	44.70		80.03						
Cedarpines Park Mutual Wtr Dist	47.53	47.53	47.53	47.53	47.53				
LACSD – Arrowhead Woods	36.24	36.24	88.78		177.56	283.73	567.81		
LACSD – Deer Lodge Park	27.48	27.48	67.34		134.66	215.19			
LACSD – Rimforest Wtr	47.80	47.80	87.17	54.48	109.83	140.90	233.04		
Running Springs Wtr District		28.50	64.19	103.71	123.62	194.96	420.84		
Valley of Enchant Mutual Wtr	26.00	28.00	30.00		33.00	36.00			
Crestline Village Water District	17.50	18.50	19.50	21.75	23.50	28.50	34.50		

^{*}Includes 600 cubic feet of water

^{**}Includes 800 cubic feet of water

DISTRICT	Water Usage Rate (\$/100 CF)		
Alpine Water Users Association	\$3.30 (1-15 CCF)		
	\$6.60 (>15 CCF)		
Arrowbear Park County Wtr Dist	\$6.00 (>6 CCF)		
Big Bear City CSD	\$1.79 (0-12 CCF)		
	\$1.92 (13-38 CCF)		
	\$2.67 (>38 CCF)		
Big Bear Lake Water & Power	\$2.70 (9-24 CCF)		
	\$3.74 (25-40 CCF)		
	\$5.58 (41-60 CCF)		
	\$9.50 (61-100 CCF)		
	\$12.78 (>100 CCF)		
Cedarpines Park Mutual Wtr Dist	\$8.70 (0-480 CF)		
	\$10.30 (481-1121 CF)		
	\$12.90 (>1121 CF)		
LACSD – Arrowhead Woods	\$1.22 (0-4 CCF)		
	\$2.32 (5-13 CCF)		
	\$6.87 (14-30 CCF)		
	\$14.31 (>31 CCF)		
LACSD – Deer Lodge Park	\$3.45 (0-10 CCF)		
	\$4.12 (>10 CCF)		
LACSD – Rimforest Wtr	\$5.00 per CCF		
Running Springs Wtr District	\$4.26 per CCF		
Valley of Enchantment Mutual Wtr	\$10.75 (1-600 CF)		
	\$13.00 (601-1200 CF)		
	\$15.00 (>1200 CF)		
Crestline Village Water District	\$4.20 (0-13 CCF)		
	\$6.30 (>13 CCF)		

Mountain Area Water Rate Comparison

DISTRICT	Average Monthly Water Bill - 5/8" Meter			
	0 Cubic Feet	500 CF	800 CF	1,300 CF
Alpine Water Users Association	22.50	39.00	48.90	65.40
Arrowbear Park County Wtr Dist	24.50	24.50	36.50	66.50
Big Bear City CSD	34.89	43.84	49.21	62.13
Big Bear Lake Water & Power	44.70	44.70	44.70	58.20
Cedarpines Park Mutual Wtr Dist	47.53	91.35	122.25	178.40
LACSD – Arrowhead Woods	36.24	43.44	50.40	62.00
LACSD – Deer Lodge Park	27.48	44.73	55.08	74.34
LACSD – Rimforest Wtr	47.80	72.80	87.80	112.80
Running Springs Wtr District *	28.50	49.80	62.58	83.88
Valley of Enchantment Mutual Wtr	26.00	79.75	116.50	183.50
Crestline Village Water District	17.50	38.50	51.10	72.10

^{*} Running Springs Water District's minimum meter size is a full ¾" meter.

DISTRICT	Annual Assessment		
Alpine Water Users Association	\$100 per parcel		
Arrowbear Park County Wtr Dist			
Big Bear City CSD	Improved (Less than 1 acre): \$30.00 Unimproved: \$40.00		
Big Bear Lake Water & Power			
Cedarpines Park Mutual Wtr Dist	None		
LACSD – Arrowhead Woods	None		
LACSD – Deer Lodge Park	None		
LACSD – Rimforest Wtr	None		
Running Springs Wtr District	\$30.00		
Valley of Enchantment Mutual Wtr	None		
Crestline Village Water District	Improved (Less than 1 acre): \$15.00 Unimproved (Less than 1 acre): \$30.00		