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# Castroville Community Services District

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## Water Rate Study

Submitted to:  
**Castroville Community Services District**

Prepared by:  
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## **EXECUTIVE SUMMARY**

Castroville Community Services District, hereafter (“CCSD” or the “District”) engaged Harris & Associates to conduct a comprehensive study of its water enterprise with the primary objective to create a financial plan and rate structure which balances the fiscal needs of the agency and limits the impact of a new rate structure upon its water utility customers. The preparation of this water rate study focused on projections of revenues, expenses of all types, and the water system cash & cash equivalents (fund) balance through Fiscal Year Ending (hereafter “FYE”) 2020. Based on these projections, revenue increases and base fee allocation adjustments were derived to meet the funding requirements and equalize meter size relative to overall system demands, respectively. The following findings and recommendations were made.

### **Summarized Findings and Recommendations**

- **Key Assumptions:** Rates were set to generate revenue sufficient to fund CCSD’s water system operational, administrative and some capital improvement expenses from the rates, and to maintain the water utility fund balance in a range of \$3 to \$5 million. Well 6 funding, currently contemplated for FYE 2018 was not included in the rate structure.
- **Base Charge Structure:** Base charges are intended to apportion the cost of capacity among customers on the basis of the size of their services. The District’s current service charges for larger services are not aligned with the capacity that they provide. The proposed base charges are adjusted over the first two years of this study so that they are aligned by the third year. After the re-alignment is achieved by FYE 2018, subsequent rate increases through the end of this rate study are made by an equal percentage amount among all meter sizes.
- **Volumetric Charge Structure:** With the recent court opinion provided in the case of *Capistrano Taxpayers Association vs. City of San Juan Capistrano*, the District cannot maintain multiple consumption tiers and be legally compliant, since it derives its entire water supply from a single source (local groundwater wells). Given these recent legal changes, the recommended rate structure includes a single tier for all levels of consumption.
- **Base and Volumetric Charge Component Balance:** The revenue from the base charges is currently 54% of total rate revenue; while the remaining water rate revenue is generated by the volumetric charges. Efforts were made to maintain this balance, however in some of the fiscal years’ projections, the balance approaches 60% base/40% volumetric. Much of this is related to extraordinary base charge specific capital improvements, and is congruent with many other agencies’ rate structure updates, as a result of drought-motivated customers reducing consumption. By FYE 2020, the balance returns to 57% base/43% volumetric, which is very close to the historical norm.
- **Rate Projections:** The rate projections through FYE 2020 are shown in Table 1 on the following page. With these increases, the District will be able to fund all of its projected operational and administrative expenses, along with the majority of its planned capital improvements over the next five years on a pay-as-you-go cash basis as directed by CCSD Staff. In addition, fund balance, while expected to fall below the targeted range stated above due to large FYE 2016 capital expenses, will rebound by the end of the rate study period and reach an estimated \$3.6 million in FYE 2020.



**Table 1 – Current and Proposed Rate Structures**

Meter Size	Service Type	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
		Current	Proposed	Proposed	Proposed	Proposed	Proposed
3/4" Meter	Water	\$ 14.87	\$ 16.60	\$ 18.33	\$ 19.24	\$ 20.01	\$ 20.81
1" Meter	Water	\$ 24.73	\$ 27.67	\$ 30.62	\$ 32.15	\$ 33.43	\$ 34.77
1 1/2" Meter	Water	\$ 37.61	\$ 48.72	\$ 59.84	\$ 62.83	\$ 65.34	\$ 67.96
2" Meter	Water	\$ 58.37	\$ 77.80	\$ 97.24	\$ 102.10	\$ 106.18	\$ 110.43
3" Meter	Water	\$ 98.15	\$ 146.35	\$ 194.54	\$ 204.27	\$ 212.44	\$ 220.94
4" Meter	Water	\$ 186.48	\$ 244.98	\$ 303.47	\$ 318.64	\$ 331.39	\$ 344.65
6" Meter	Water	\$ 280.02	\$ 445.00	\$ 609.98	\$ 640.47	\$ 666.09	\$ 692.74
2" Meter	FireLine	\$ 9.17	\$ 9.71	\$ 10.26	\$ 10.77	\$ 11.20	\$ 11.65
3" Meter	FireLine	\$ 13.70	\$ 16.50	\$ 19.31	\$ 20.27	\$ 21.08	\$ 21.92
4" Meter	FireLine	\$ 18.75	\$ 28.61	\$ 38.48	\$ 40.40	\$ 42.01	\$ 43.70
6" Meter	FireLine	\$ 27.41	\$ 56.98	\$ 86.55	\$ 90.87	\$ 94.51	\$ 98.29
8" Meter	FireLine	\$ 36.55	\$ 75.97	\$ 115.38	\$ 121.15	\$ 126.00	\$ 131.04
10" Meter	FireLine	\$ 45.70	\$ 100.07	\$ 154.44	\$ 162.17	\$ 168.65	\$ 175.40
12" Meter	FireLine	\$ 54.58	\$ 135.34	\$ 216.11	\$ 226.91	\$ 235.99	\$ 245.43
No Size	Surcharge	\$ 14.87	\$ 16.60	\$ 18.33	\$ 19.24	\$ 20.01	\$ 20.81
<b>Water Rate per cubic foot (cf):</b>							
Existing Tier 1 Rate/cf (0-500):		\$ 0.0076					
Existing Tier 2 Rate/cf (501+):		\$ 0.0140					
<b>Proposed Single Rate/cf</b>			\$ 0.0140	\$ 0.0161	\$ 0.0180	\$ 0.0198	\$ 0.0218



**SECTION I – INTRODUCTION**

**Overview**

CCSD last adjusted water rates in 2004. In the ensuing eleven years, inflation has reduced the District’s purchasing power by approximately 25%. Simultaneous with this reduction is the current severe drought currently gripping the State of California. The drought has already exacerbated a salt water intrusion issue into one of CCSD’s three shallow-aquifer wells (Well 3). If the drought persists, and the other two wells (Wells 2 and 4) continue to show well water levels below sea level, salt water intrusion is expected in those facilities too. The salt water intrusion in Well 3 (and potential of the same in Wells 2 and 4) has created a need for a replacement groundwater source; and this requirement, in addition to other capital assets which need to be replaced as their usable lives are completed over the next few years comprise significant future capital asset expenses. (In some cases, CCSD has capital assets which have already completed their estimated usable lives, and correspondingly been fully depreciated, yet are still in service.) The District has completed a Capital Improvement Projects Budget through FYE 2020, and it is included in the analytical basis of this rate study. Given this backdrop of static revenue and escalating expenses of multiple types, this rate study identifies revenue increases and rate structure changes to implement rates for FYE 2016 through FYE 2020 while estimating expense escalation over the same period.

**Current Rates**

CCSD’s water system serves a population of approximately 7,200 which includes 2,124 water connections in the Castroville area. CCSD water rate payers are billed the sum of two charges each month for water service: a base fee based on the size of service meter, and a two-tiered volumetric charge based on metered water use during the billing period. The base fee charge for a meter of any given size is the same for all meters of that size regardless of which customer class (e.g. residential, commercial or industrial) is served. In addition to water service, customers who receive fireline service and/or have multiple customers receiving water service from one meter (e.g. multi-family residential) pay additional base fees for these services. As mentioned above, CCSD last increased its rates in 2004. The current rates are shown in Table 2 below.

**Table 2 – Current Rates**

<b>Monthly Base Water Rates</b>		<b>Monthly Base Fire Service Rates</b>	
<b>Meter Size (inches)</b>	<b>Amount</b>	<b>Meter Size (inches)</b>	<b>Amount</b>
0.75	\$ 14.87	2.00	\$ 9.17
1.00	\$ 24.73	3.00	\$ 13.70
1.50	\$ 37.61	4.00	\$ 18.75
2.00	\$ 58.37	6.00	\$ 27.41
3.00	\$ 98.15	8.00	\$ 36.55
4.00	\$ 186.48	10.00	\$ 45.70
6.00	\$ 280.02	12.00	\$ 54.58
<b>Additional Unit</b>	\$ 14.87		
<b>Volumetric Rates (per cubic foot - cf)</b>			
0 to 500 cf	\$0.0076		
501 cf & up	\$0.0140		



## **Rate Making Goals and Objectives**

CCSD has a number of rate-making goals and objectives that the recommended rate structure is designed to achieve. The rate structure is designed to provide for:

- **Revenue sufficiency** – Generate sufficient revenue to fund operating, administrative, and capital costs while maintaining a cash & cash equivalents reserve of \$3 to \$5 million as June 30, 2020.
- **Revenue stability** – Collect adequate revenue from all of the CCSD water utility's services to cover fixed and variable costs, while anticipating continued decreases in consumption due to the drought and customer reaction to rate structure modifications.
- **Administrative ease** – Enhance CCSD Staff's operationalization of new rates and promote seamless ongoing administration of the recommended rate structure.
- **Affordability** – Be as inexpensive as possible to customers while balancing CCSD's long-term financial needs to provide quality water services.
- **Customer acceptance** – Create a structure that is transparent and simple for customers to understand, thereby facilitating buy-in by all CCSD stakeholders.
- **Fairness** – Create a rate structure that promotes equity among customer classes and meter connection size, by prorating requisite costs by share of the water system's capacity in a legally compliant manner and reflecting rate study best practice methodologies.

Given a recent legal outcome related to multiple water usage tiers, *CTA vs. City of San Juan Capistrano*, and the fact that CCSD's sole source of water is groundwater, a key consideration of this rate study was creating a rate structure with a single commodity rate or tier per water unit consumed. This is important due to the legal requirements that were borne out of this legal decision.

In addition, Harris performed calculations regarding the congruence of CCSD base fees by meter size and each connection's calculated maximum safe capacity prorated as a share of the entire system capacity.

Thirdly, efforts were made within rate structure design to maintain the current proportional balance of fixed to variable elements of revenues and costs (54% fixed and 46% variable), although some years in the rate study period do reflect a slightly higher fixed component, which is similar to other agencies' recently updated rate structures as expenses escalate and consumption declines largely due to the drought.

Lastly, the recommended rate structure was largely designed to fund capital improvement plan budget items within the rate structure. The single exception to this premise was the removal of the \$1 million estimated construction cost of the deep aquifer Well 6 in FYE 2018, per CCSD Board of Directors' direction at the September 15, 2015 CCSD Board Meeting. It was reasoned that if Well 6 is needed, grant funding is a possibility to underwrite the cost of construction. If grant funding is not available and Well 6 is needed, the impact upon the ending Water Fund balance of \$3.6 million is a \$1 million reduction of available operational and capital funding.



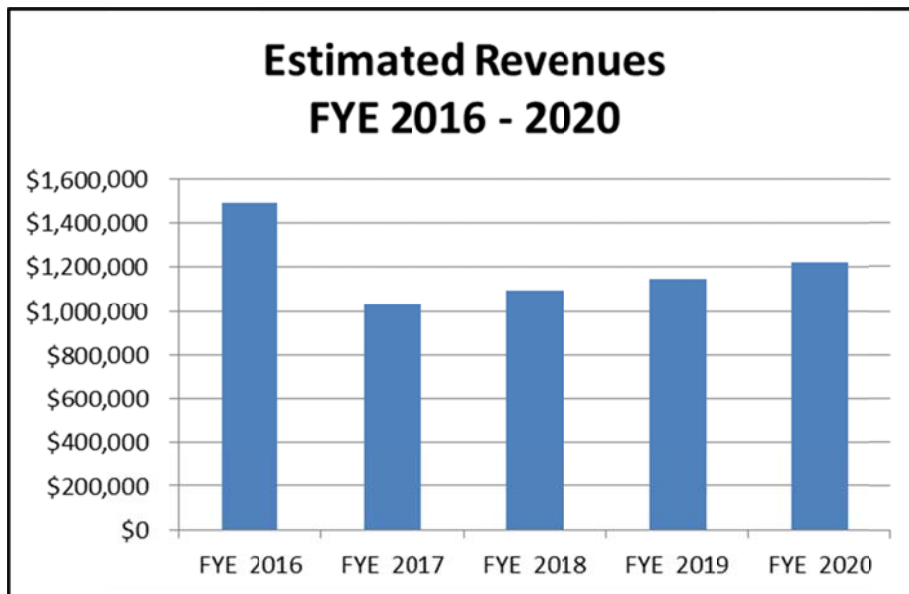
## **SECTION II – REVENUE & EXPENSE REQUIREMENT PROJECTIONS**

To determine whether additional rate revenue is required, expense projections for operating, administrative, and capital expenses are compared with projected revenue from current rates. Rates are then increased so that the expenses are covered and operating and capital reserves are maintained. CCSD’s FYE 2016 budget served as a starting point to determine the revenue requirement projections throughout the rate study period. Individual revenue and expense accounts from CCSD’s accounting system were adjusted in each fiscal year in the rate study via consultant financial analysis projection. The consultant projections were presented to and discussed with CCSD Staff to confirm validity and insure accuracy.

### **Revenue Projections**

Revenue from Metered Water Sales is extensively discussed in SECTION III – RATE DESIGN of this report, thus this section highlights all other revenue sources for the District. Most of the other revenue sources are static throughout the rate study period, and represent a small portion of the District’s overall funding. However a few of the revenue sources do possess inter-year variability. First, new service connections revenue is expected to increase due to a few new connections which are expected to occur annually and are included in the set of assumptions within SECTION III – RATE DESIGN. Next, CCSD has secured \$581,000 in one-time grant funding for Well 2B/5 arsenic remediation in FYE 2016. Lastly, property tax assessment bond revenue includes \$29,000 in FYE 2016, which is congruent with the CCSD operating budget, and represents the full amount of annual revenue. However, FYE 2017 – 2020 only include the portion of property tax assessment bond revenue that offsets the expenses CCSD shoulders due to the existence of the assessment district. The remainder of revenue is actually offset by a long-term liability account, and since the rate study only considers revenue and expense accounts, it would overstate revenue to include this portion, especially over a multi-year period; thus the variance is omitted for the purpose of the rate study analysis in FYE 2017 – 2020.

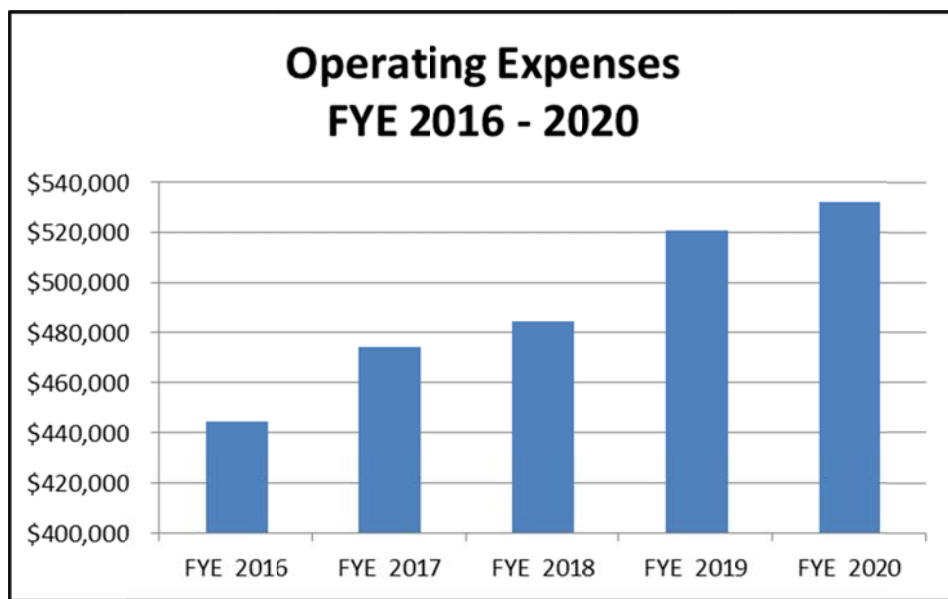
**Chart 1 – Revenue Projections FYE 2016 – 2020**



### **Operating Expense Projections**

The category of Operating Expenses is forecast to increase by nearly 20% over the course of the rate study period. This aggregate variance is largely comprised of individual expenses that are forecast to increase by an annual inflation factor of 2% or remain flat through FYE 2020. While this seems contradictory, there are a few large expense accounts in this category that are forecast to increase by greater than 2% as described below. The three expenses with the largest forecast increases across the rate study period are PG&E Utilities, Fuel, and Depreciation (a non-cash expense) at 31%, 22% and 21%, respectively. Overall, this category's likely escalation in the future warrants strong rate structure adjustment consideration to provide financial strength and thereby surety of high quality water to the District's customers.

**Chart 2 – Operating Expenses FYE 2016 – 2020**

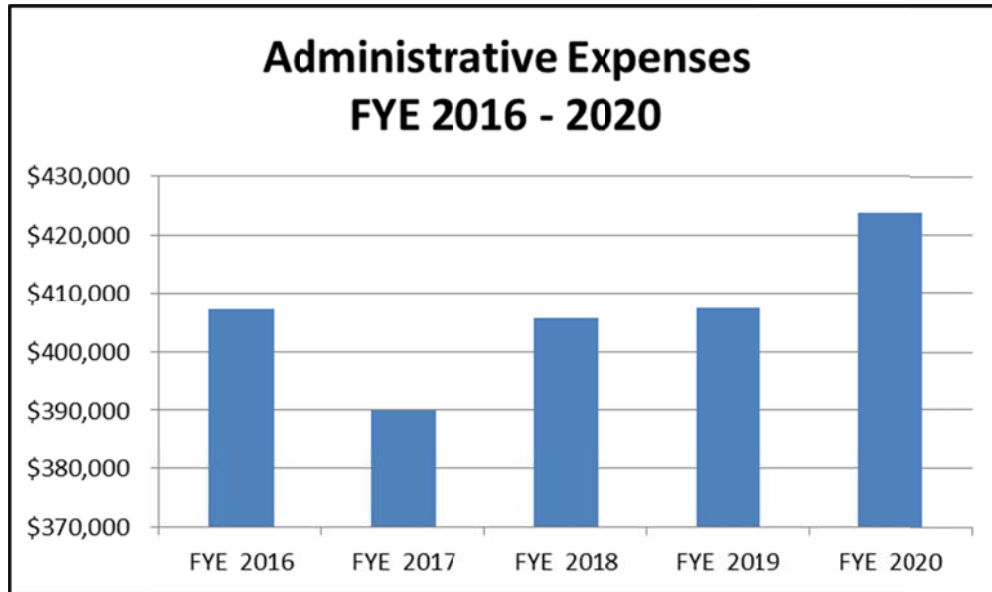


### **Administrative Expense Projections**

The Administrative Expense category is forecast to increase by 4% over the full rate study period, so it's a much smaller multi-year increase than the Operating Expense category. Notable of the Administrative Expenses that do escalate significantly are a number of payroll expenses that are largely beyond the control of District Staff such as Employee Health Benefits, PERS Retirement Benefits, Retired Employee Benefits, and Other Post-Employment Benefits. In summary, the Administrative Expense Category is largely static over the rate study period which will help to minimize the impact of new rates on CCSD customers.



Chart 3 – Administrative Expenses FYE 2016 – 2020

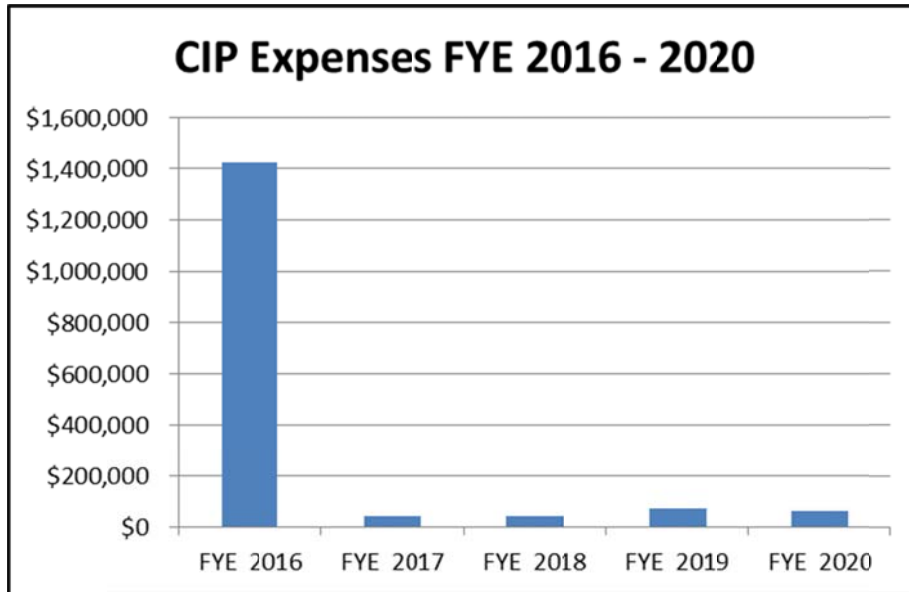


### Capital Improvement Expense Projections

Capital Improvement Expenses are a significant factor in the recommended rate structure of this study. Per CCSD budget review for FYE 2010 through 2016, it is clear that a deferral of capital asset repair and/or replacement has occurred. CCSD is not unique in this regard, given that much of this time period saw the worst economy in the last 80 years. However fixed assets do wear out, and a review of CCSD's Capital Asset Detail and Depreciation Schedule show a number of assets that have either reached the end of their usable lives or will do so during the next few years. In addition to these aging assets, the severe drought that currently grips the western United States, has exacerbated salt water intrusion into CCSD's three wells and created a need for a replacement groundwater source, which the District has partially achieved with the construction of a deep aquifer well (Well 2B/5) in recent years. However, Well 2B/5 has levels of arsenic that exceed the Environmental Protection Agency's (EPA) limit of 10 parts per billion (ppb). The Well 2B/5 arsenic remediation, scheduled for completion in FYE 2016, is the primary Capital Improvement Project (CIP) included in the rate study, since its \$1.4 million cost represents 86% of the total CIP budget for the five year period FYE 2016 – 2020. While Well 2B/5 represents a partial supply solution, an additional deep aquifer well (Well 6) may be needed by FYE 2018 and is not included in this analysis, per Board of Directors' direction. Other capital improvement expenses the District plans to complete includes the replacement of valves, radio read meters, and pump equipment in each year of the analysis, along with service lateral replacements in FYE 2017 – 2020. Lastly, the District plans to replace vehicles in FYE 2019 and 2020. The capital improvements detailed above coupled with future repair/replacement efforts beyond the rate study period are assumed to be funded on a pay-as-you-go basis, meaning these costs are included in the recommended rate structure.

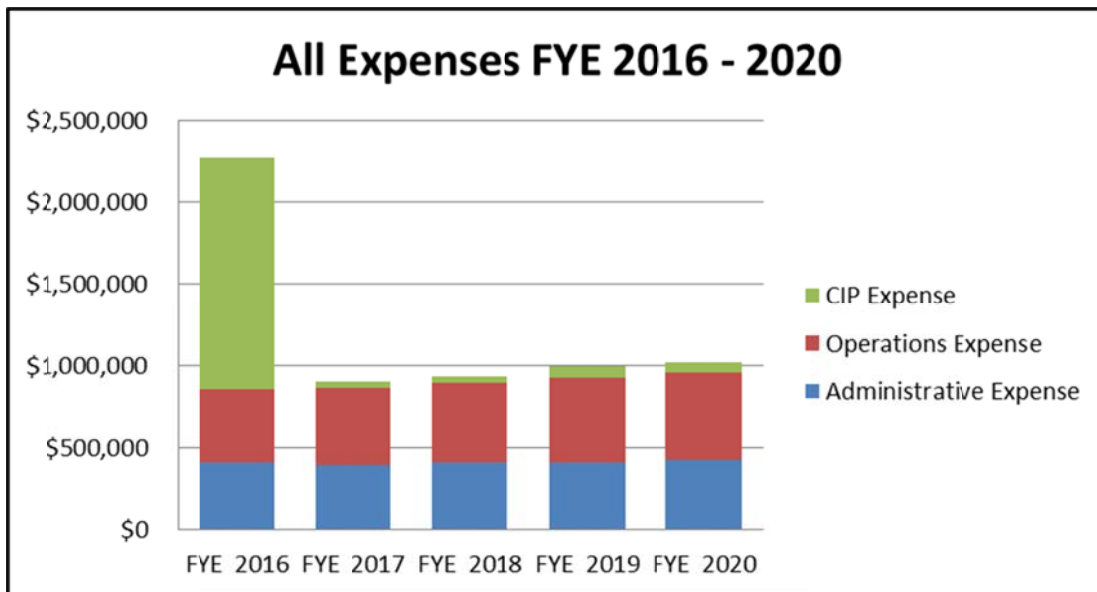


**Chart 4 – CIP Expenses FYE 2016 – 2020**



CCSD’s water utility expenses of all types are illustrated in Chart 5 below for FYE 2016 – 2020.

**Chart 5 – Total CCSD Water Expenses FYE 2016 – 2020**



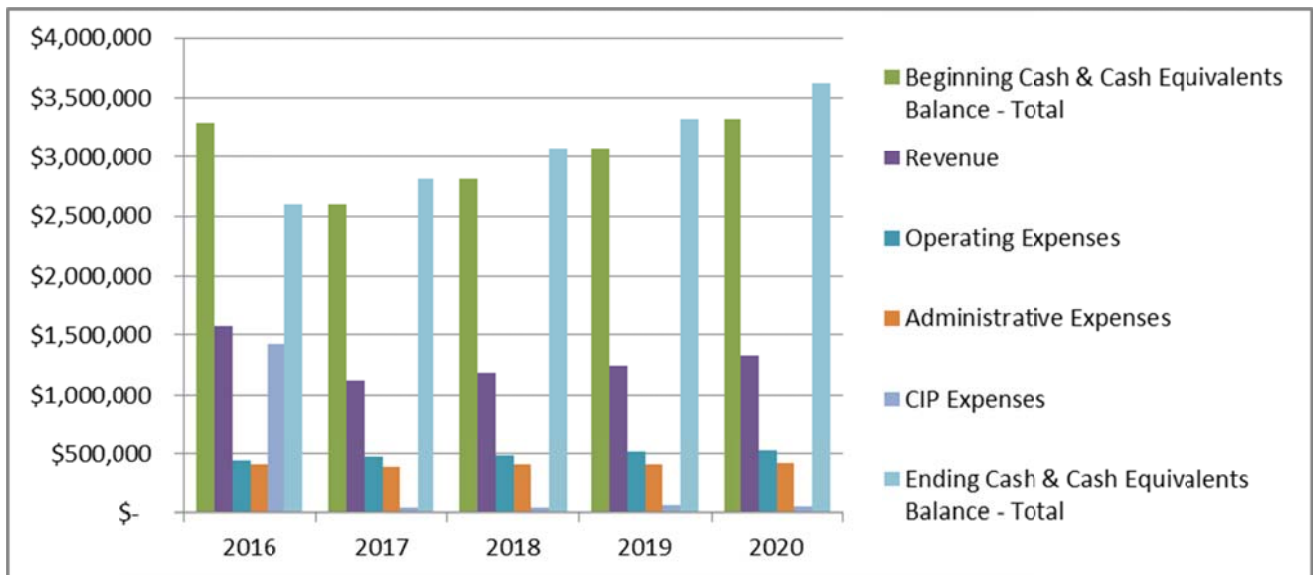
**CASTROVILLE COMMUNITY SERVICES DISTRICT**  
**Water Rate Study**

The table and chart below summarize and illustrate CCSD's financial condition over the rate study period with the inclusion of beginning and ending cash & cash equivalents balances (fund balance). The recommended rate structure, as detailed in the next section, yields an ending fund balance of \$3.6 million.

**Table 3 – CCSD Water Financial Summary Projection FYE 2016 – 2020**

Fiscal Year Ending	2016	2017	2018	2019	2020
<b>Beginning Cash &amp; Cash Equivalents Balance - Total</b>	<b>\$ 3,292,789</b>	<b>\$ 2,595,923</b>	<b>\$ 2,811,937</b>	<b>\$ 3,070,637</b>	<b>\$ 3,318,811</b>
Revenue	\$ 1,576,334	\$ 1,119,521	\$ 1,187,980	\$ 1,245,620	\$ 1,324,416
Operating Expenses	\$ 444,832	\$ 474,462	\$ 484,600	\$ 520,843	\$ 531,993
Administrative Expenses	\$ 407,368	\$ 390,045	\$ 405,680	\$ 407,603	\$ 423,827
CIP Expenses	\$ 1,421,000	\$ 39,000	\$ 39,000	\$ 69,000	\$ 59,000
Annual Surplus/(Deficit)	\$ (696,866)	\$ 216,014	\$ 258,700	\$ 248,174	\$ 309,595
<b>Ending Cash &amp; Cash Equivalents Balance - Total</b>	<b>\$ 2,595,923</b>	<b>\$ 2,811,937</b>	<b>\$ 3,070,637</b>	<b>\$ 3,318,811</b>	<b>\$ 3,628,406</b>

**Chart 6 – CCSD Water Financial Summary FYE 2016 – 2020**



### SECTION III – RATE DESIGN

The rate design produces rates that will generate the appropriate amount of revenue from the service and volumetric charges and, with respect to the volumetric charges, from each customer class. The estimated ending cash and cash equivalents balance of \$3.6 million is well within the stated goal range of \$3 to \$5 million while providing a partial hedge against the construction possibly of Well 6 in FYE 2018 at an estimated cost of \$1 million.

Service charge revenue covers a portion of the water system’s fixed costs, which are the majority of the District’s costs. The remainder of the fixed costs is covered by the volumetric charges. The District’s current service charges generate about 54 percent of the total rate revenue, which is above the upper limit recommended by California Urban Water Conservation Council guidelines. However, In view of the fact that the District is currently confronted with a multi-faceted financial challenge of replacing existing wells with a deep aquifer well replacement (and associated arsenic remediation), and declining water consumption as a result of the severe drought gripping California, having 54% to 60% of total revenue come from the fixed charge revenue component adds revenue stability during this period of extraordinary expenses and questionable sustainability of volumetric consumption.

#### Financial and Operational Goals and Assumptions

In designing the rate structure, Harris & Associates collaborated with CCSD Staff to determine a set of goals and assumptions to achieve in the new rate structure design. These elements included all of the following:

- **Customer Count/Connection Growth** – Estimates for connection growth are quite low. CCSD Staff expects to provide four or five “will serve” letters annually. The analysis reflects this slow increase over the rate study period.

**Table 4 – Estimated Customer Counts by Meter Size and Service FYE 2016 – 2020**

Meter Size	Acct Count by Meter Size	FYE 2015 AVG	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
3/4" Meter	Water	1133	1137	1142	1146	1150	1154
1" Meter	Water	132	132	133	133	134	135
1 1/2" Meter	Water	65	65	65	66	66	66
2" Meter	Water	49	49	49	50	50	50
3" Meter	Water	12	12	12	12	12	12
4" Meter	Water	2	2	2	2	2	2
6" Meter	Water	0	1	1	1	1	1
2" Meter	FireLine	8	8	8	8	8	8
3" Meter	FireLine	0	1	1	1	1	1
4" Meter	FireLine	17	17	17	17	17	17
6" Meter	FireLine	21	21	21	21	21	21
8" Meter	FireLine	18	18	18	18	18	18
10" Meter	FireLine	1	1	1	1	1	1
12" Meter	FireLine	2	2	2	2	2	2
No Size	Surcharge	544	546	548	550	552	554
No Size	Water CMPN	2	2	2	2	2	2
<b>Total</b>		<b>2006</b>	<b>2015</b>	<b>2023</b>	<b>2031</b>	<b>2038</b>	<b>2046</b>



- **Consumption** – Water consumption is anticipated to decrease by 20% over the rate study period with half of that decline estimated to come in FYE 2016. Recent years’ actual consumption data show a 4% or 5% reduction without a rate structure adjustment. In addition, national studies show that upon the establishment of utility rate increases, a reduction in consumption of 2% to 5% in the following year is typical. Consumption is estimated to level out between FYE 2019 and 2020.

**Table 5 – Estimated Consumption by Meter Size & Service FYE 2016 – 2020**

		Water Use (cf) by					
Meter Size	Meter Size	FYE 2015	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
3/4" Meter	Water	14,221,223	12,799,101	12,372,891	11,960,873	11,562,576	11,562,576
1" Meter	Water	1,985,648	1,787,083	1,727,573	1,670,045	1,614,433	1,614,433
1 1/2" Meter	Water	3,840,390	3,456,351	3,341,255	3,229,991	3,122,432	3,122,432
2" Meter	Water	3,280,342	2,952,308	2,853,996	2,758,958	2,667,085	2,667,085
3" Meter	Water	2,929,800	2,636,820	2,549,014	2,464,132	2,382,076	2,382,076
4" Meter	Water	4,226,300	3,803,670	3,677,008	3,554,563	3,436,196	3,436,196
6" Meter	Water	-	-	-	-	-	-
2" Meter	FireLine	11,198	5,599	5,599	5,599	5,599	5,599
3" Meter	FireLine	-	-	-	-	-	-
4" Meter	FireLine	108	648	648	648	648	648
6" Meter	FireLine	160	160	160	160	160	160
8" Meter	FireLine	1,003	1,003	1,003	1,003	1,003	1,003
10" Meter	FireLine	-	-	-	-	-	-
12" Meter	FireLine	21	21	21	21	21	21
No Size	Surcharge	-	-	-	-	-	-
No Size	Water CMPN	64,098	57,688	55,767	53,910	52,115	52,115
<b>Total</b>		<b>30,560,291</b>	<b>27,500,452</b>	<b>26,584,934</b>	<b>25,699,903</b>	<b>24,844,344</b>	<b>24,844,344</b>

- **Capital Asset Replacement** – As detailed earlier in this report, CCSD has a need for significant capital asset replacement or extraordinary repair, especially early in the rate study period (Well 2B/5 arsenic remediation). These expenses are included in the rate study budgeting, except for the possible \$1 million construction of Well 6 in FYE 2018.
- **Cash & Cash Equivalents Balance (Reserve)** – The Water Fund optimally needs to maintain a cash and cash equivalents balance of \$3 to \$5 million to ensure sufficient funding for standard operating & administrative expenses, capital improvement expenses, as well as any emergency costs.

**Table 6 – CCSD Water Financial Summary Projection FYE 2016 – 2020**

Fiscal Year Ending	2016	2017	2018	2019	2020
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- **Proportional Revenue/Cost Ratio of Base vs. Volumetric Components** – Rate structure design efforts have been made to maintain the current proportion of 54% base and 46% volumetric revenue/cost components; however due to unusually large CIP expenses and an anticipated decline in consumption some of the rate study fiscal years approach a 60% base/40% volumetric split between revenue/cost components.

## **Legal Compliance**

The ruling on a recent California court case, *Capistrano Taxpayers Association (CTA) vs. City of San Juan Capistrano (SJC)*, has a significant effect on the volumetric rate component of the rate structure. The ruling from the Appellate Court in April 2015, which was indirectly confirmed by the California Supreme Court (via the High Court's refusal to hear the case in July 2015), states that tiered water rates are fine within the Proposition 218 world, however the tiers must correspond to the actual cost of providing service at a given level of usage rather than by pre-determined usage budgets. For water agencies that procure water from distinctly different sources (e.g. groundwater vs. surface water vs. purchased water from another agency), this cost of service variance at different levels is possible to quantify. However, since CCSD provides all of its water via a single source (groundwater), a cost of service variance does not exist. Since a cost of service variance does not exist, a multiple-tiered volumetric rate structure is not compliant with CTA vs. SJC. Given this legal precedent, the volumetric component of the recommend rate structure has a single tier.

## **Base Rate Service Charges**

The base rate service charges within the recommended rate structure represent two modifications from the current structure. The first is simply a general escalation due to the CIP expenses being built into the rates on a Pay-As-You-Go structure, meaning no debt financing or other outside funding is expected to underwrite these expenses which are much larger than prior years' budgets. The second modification is a method of sizing the base fees by each connection's prorated share of the entire system capacity. This reallocation of the overall system capacity to each of the system connections by each connection's share of the system capacity is synonymous with the manner prescribed in the American Water Works Association, *AWWA Manual M1, Sixth Edition* (hereafter "M1 Manual"). The M1 Manual further advocates the use of cost functionalization, which is the proration of the projected agency costs to base water, base fire service, or volumetric (commodity) cost categories. This process was completed as a part of the analysis and provides the budgetary basis to quantify the reallocation of system capacity described above to each connection size and service type. Because the reallocation is a significant change, it is recommended to be phased in over two years (FYE 2016 and 2017). The recommended base rates by meter size and service type are shown in Table 7 on the following page.



**Table 7 – Current and Recommended Base Rates**

Meter Size	Service Type	FYE 2015 (Current)	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
3/4" Meter	Water	\$ 14.87	\$ 16.60	\$ 18.33	\$ 19.24	\$ 20.01	\$ 20.81
1" Meter	Water	\$ 24.73	\$ 27.67	\$ 30.62	\$ 32.15	\$ 33.43	\$ 34.77
1 1/2" Meter	Water	\$ 37.61	\$ 48.72	\$ 59.84	\$ 62.83	\$ 65.34	\$ 67.96
2" Meter	Water	\$ 58.37	\$ 77.80	\$ 97.24	\$ 102.10	\$ 106.18	\$ 110.43
3" Meter	Water	\$ 98.15	\$ 146.35	\$ 194.54	\$ 204.27	\$ 212.44	\$ 220.94
4" Meter	Water	\$ 186.48	\$ 244.98	\$ 303.47	\$ 318.64	\$ 331.39	\$ 344.65
6" Meter	Water	\$ 280.02	\$ 445.00	\$ 609.98	\$ 640.47	\$ 666.09	\$ 692.74
2" Meter	FireLine	\$ 9.17	\$ 9.71	\$ 10.26	\$ 10.77	\$ 11.20	\$ 11.65
3" Meter	FireLine	\$ 13.70	\$ 16.50	\$ 19.31	\$ 20.27	\$ 21.08	\$ 21.92
4" Meter	FireLine	\$ 18.75	\$ 28.61	\$ 38.48	\$ 40.40	\$ 42.01	\$ 43.70
6" Meter	FireLine	\$ 27.41	\$ 56.98	\$ 86.55	\$ 90.87	\$ 94.51	\$ 98.29
8" Meter	FireLine	\$ 36.55	\$ 75.97	\$ 115.38	\$ 121.15	\$ 126.00	\$ 131.04
10" Meter	FireLine	\$ 45.70	\$ 100.07	\$ 154.44	\$ 162.17	\$ 168.65	\$ 175.40
12" Meter	FireLine	\$ 54.58	\$ 135.34	\$ 216.11	\$ 226.91	\$ 235.99	\$ 245.43
No Size	Surcharge	\$ 14.87	\$ 16.60	\$ 18.33	\$ 19.24	\$ 20.01	\$ 20.81

**Volumetric Commodity Charges**

Similar to the base rate structure, the recommended volumetric rate structure suggests two primary changes to the current rate structure. First, as detailed in the Legal Compliance subsection earlier in this section, the recommended rate structure eliminates the current first tier and simply assumes all water consumption is billed at \$0.014/cubic foot (cf), which is the current rate structure’s second tier. This provides legal compliance to CTA vs. SJC, simplicity of billing for CCSD Staff, and simplicity of understanding among rate payers in estimating/calculating their monthly bills. The second change is related to commodity pricing escalation to assist in funding the large CIP expenses previously mentioned in this rate study report, while maintaining a close semblance to the current revenue/cost ratio of base and volumetric components. The recommended volumetric rates are illustrated in Table 8 below.

**Table 8 – Current and Recommended Volumetric Rates**

Water Rate per cf:	FYE 2015 (Current)	FYE 2016	FYE 2017	FYE 2018	FYE 2019	FYE 2020
Existing Tier 1 Rate/cf (0-500):	\$ 0.0076					
Existing Tier 2 Rate/cf (501+):	\$ 0.0140					
<b>Proposed Single Rate/cf</b>		<b>\$ 0.0140</b>	<b>\$ 0.0161</b>	<b>\$ 0.0180</b>	<b>\$ 0.0198</b>	<b>\$ 0.0218</b>



**SECTION IV – CUSTOMER BILL IMPACTS**

As previously detailed, the District’s customers pay the sum of two charges every month for water service: a basic service charge based on the size of the service meter plus a volumetric charge based on metered water use during the billing period. Because of the structure of the rates, the impact on bills depends on the amount of water use. Examples of the effect of the recommended rate structure are illustrated in the following tables.

**Table 9 – Single Family Residential Customer**

<b>SFR Water Customer (assume 3/4" meter &amp; 1,000 cf)</b>	<b>Current</b>					
	<b>(FYE 2015)</b>	<b>FYE 2016</b>	<b>FYE 2017</b>	<b>FYE 2018</b>	<b>FYE 2019</b>	<b>FYE 2020</b>
Base Fee	\$ 14.87	\$ 16.60	\$ 18.33	\$ 19.24	\$ 20.01	\$ 20.81
Tier 1	\$ 3.80	\$ 14.00	\$ 16.10	\$ 18.03	\$ 19.84	\$ 21.82
Tier 2	\$ 7.00	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>\$ 25.67</b>	<b>\$ 30.60</b>	<b>\$ 34.43</b>	<b>\$ 37.28</b>	<b>\$ 39.85</b>	<b>\$ 42.63</b>
<i>Base % Δ from Current (FYE 2015)</i>		11.63%	23.25%	29.41%	34.59%	39.98%
<i>Commodity % Δ from Current (FYE 2015)</i>		29.63%	49.07%	66.96%	83.66%	102.03%
<i>Total Cost % Δ from Current (FYE 2015)</i>		19.20%	34.12%	45.21%	55.24%	66.08%
<i>Total Cost % Δ from Prior Year</i>		19.20%	12.51%	8.27%	6.90%	6.99%
<i>Base \$ Δ from Current (FYE 2015)</i>		\$ 1.73	\$ 3.46	\$ 4.37	\$ 5.14	\$ 5.94
<i>Commodity \$ Δ from Current (FYE 2015)</i>		\$ 3.20	\$ 5.30	\$ 7.23	\$ 9.04	\$ 11.02
<i>Total Cost \$ Δ from Current (FYE 2015)</i>		\$ 4.93	\$ 8.76	\$ 11.61	\$ 14.18	\$ 16.96
<i>Total Cost \$ Δ from Prior Year</i>		\$ 4.93	\$ 3.83	\$ 2.85	\$ 2.57	\$ 2.78

**Table 10 – Commercial Customer**

<b>Commercial Water Customer (assume 1 1/2" meter &amp; 5,400 cf)</b>	<b>Current</b>					
	<b>(FYE 2015)</b>	<b>FYE 2016</b>	<b>FYE 2017</b>	<b>FYE 2018</b>	<b>FYE 2019</b>	<b>FYE 2020</b>
Base Fee	\$ 37.61	\$ 48.72	\$ 59.84	\$ 62.83	\$ 65.34	\$ 67.96
Tier 1	\$ 3.80	\$ 75.60	\$ 86.94	\$ 97.37	\$ 107.11	\$ 117.82
Tier 2	\$ 68.60	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>\$ 110.01</b>	<b>\$ 124.32</b>	<b>\$ 146.78</b>	<b>\$ 160.20</b>	<b>\$ 172.45</b>	<b>\$ 185.78</b>
<i>Base % Δ from Current (FYE 2015)</i>		29.55%	59.10%	67.06%	73.74%	80.69%
<i>Commodity % Δ from Current (FYE 2015)</i>		4.42%	20.08%	34.49%	47.94%	62.74%
<i>Total Cost % Δ from Current (FYE 2015)</i>		13.01%	33.42%	45.63%	56.76%	68.87%
<i>Total Cost % Δ from Prior Year</i>		13.01%	18.06%	9.15%	7.65%	7.73%
<i>Base \$ Δ from Current (FYE 2015)</i>		\$ 11.11	\$ 22.23	\$ 25.22	\$ 27.73	\$ 30.35
<i>Commodity \$ Δ from Current (FYE 2015)</i>		\$ 3.20	\$ 14.54	\$ 24.97	\$ 34.71	\$ 45.42
<i>Total Cost \$ Δ from Current (FYE 2015)</i>		\$ 14.31	\$ 36.77	\$ 50.19	\$ 62.44	\$ 75.77
<i>Total Cost \$ Δ from Prior Year</i>		\$ 14.31	\$ 22.45	\$ 13.42	\$ 12.25	\$ 13.32



**Table 11 – Industrial Customer**

<b>Industrial Water Customer (assume 3" meter &amp; 25,000 cf)</b>	<b>Current (FYE 2015)</b>	<b>FYE 2016</b>	<b>FYE 2017</b>	<b>FYE 2018</b>	<b>FYE 2019</b>	<b>FYE 2020</b>
Base Fee	\$ 98.15	\$ 146.35	\$ 194.54	\$ 204.27	\$ 212.44	\$ 220.94
Tier 1	\$ 3.80	\$ 350.00	\$ 402.50	\$ 450.80	\$ 495.88	\$ 545.47
Tier 2	\$ 343.00	n/a	n/a	n/a	n/a	n/a
<b>Total</b>	<b>\$ 444.95</b>	<b>\$ 496.35</b>	<b>\$ 597.04</b>	<b>\$ 655.07</b>	<b>\$ 708.32</b>	<b>\$ 766.41</b>
<i>Base % Δ from Current (FYE 2015)</i>		49.11%	98.21%	108.12%	116.45%	125.10%
<i>Commodity % Δ from Current (FYE 2015)</i>		0.92%	16.06%	29.99%	42.99%	57.29%
<i>Total Cost % Δ from Current (FYE 2015)</i>		11.55%	34.18%	47.22%	59.19%	72.25%
<i>Total Cost % Δ from Prior Year</i>		11.55%	20.29%	9.72%	8.13%	8.20%
<i>Base \$ Δ from Current (FYE 2015)</i>	\$ 48.20	\$ 96.39	\$ 106.12	\$ 114.29	\$ 122.79	
<i>Commodity \$ Δ from Current (FYE 2015)</i>	\$ 3.20	\$ 55.70	\$ 104.00	\$ 149.08	\$ 198.67	
<i>Total Cost \$ Δ from Current (FYE 2015)</i>	\$ 51.40	\$ 152.09	\$ 210.12	\$ 263.37	\$ 321.46	
<i>Total Cost \$ Δ from Prior Year</i>	\$ 51.40	\$ 100.70	\$ 58.03	\$ 53.25	\$ 58.09	



**SECTION V – COMPARISON TO OTHER AREA WATER UTILITIES**

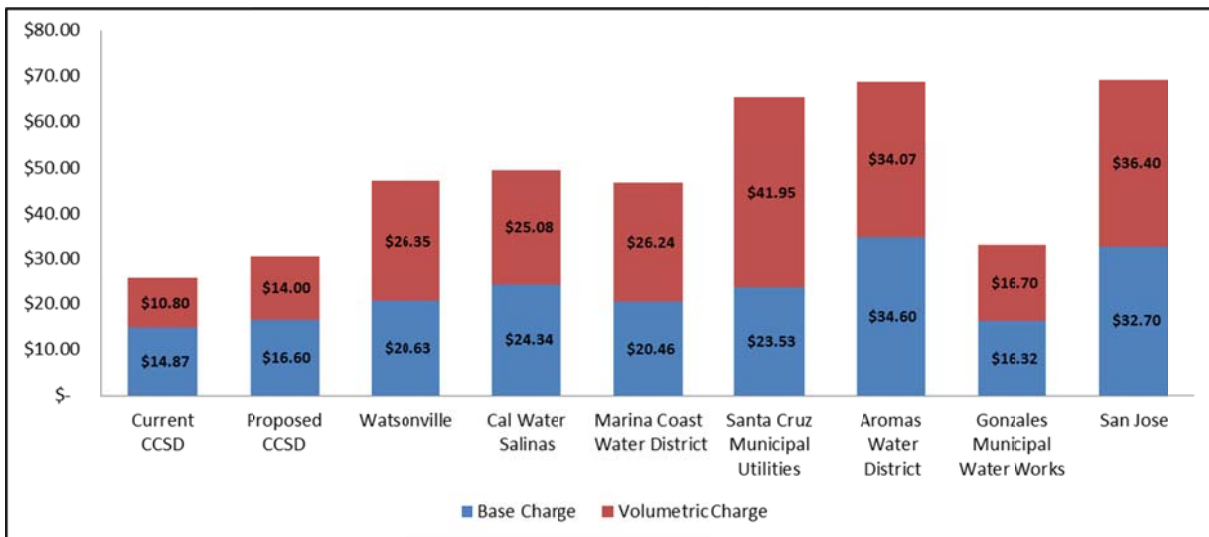
Analogous to the previous section, the tables and charts below show a comparative illustration of both the current and proposed FYE 2016 CCSD expenses by the same customer classes and usage as compared to other water utility providers in the region.

As the data shows below, even with the proposed rate increases, CCSD is still the lowest cost water provider among those displayed here for the average single family residential (SFR) customer with a ¾” meter and 1000 cf of monthly usage. SFR customers with ¾” meters represent the majority customer class within the CCSD water system customer group.

**Table 12 – Single Family Residential Customer Cost Comparison by Regional Water Providers**

SFR Water Customer (assume 3/4" meter & 1,000 cf)											
	Current CCSD	Proposed CCSD	Watsonville	Cal Water Salinas	Marina Coast Water District	Santa Cruz Municipal Utilities	Aromas Water District	Gonzales Municipal Water Works	San Jose		
Base Charge	\$ 14.87	\$ 16.60	\$ 20.63	\$ 24.34	\$ 20.46	\$ 23.53	\$ 34.60	\$ 16.32	\$ 32.70		
Volumetric Charge	\$ 10.80	\$ 14.00	\$ 26.35	\$ 25.08	\$ 26.24	\$ 41.95	\$ 34.07	\$ 16.70	\$ 36.40		
<b>Total</b>	<b>\$ 25.67</b>	<b>\$ 30.60</b>	<b>\$ 46.98</b>	<b>\$ 49.42</b>	<b>\$ 46.70</b>	<b>\$ 65.48</b>	<b>\$ 68.67</b>	<b>\$ 33.02</b>	<b>\$ 69.10</b>		

**Chart 7 – Single Family Residential Customer Cost Comparison by Regional Water Providers**



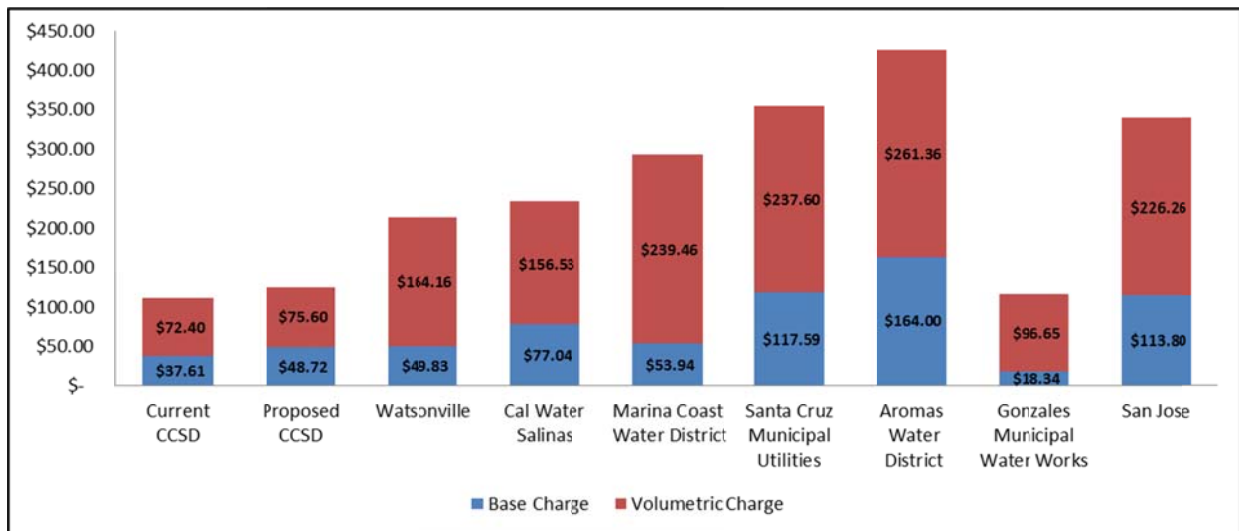
**CASTROVILLE COMMUNITY SERVICES DISTRICT**  
**Water Rate Study**

Similar to the SFR comparison, the commercial customer cost comparison shows that the proposed CCSD rate structure would still leave CCSD as the second most affordable water provider in the region among the sample of agencies shown below.

**Table 13 – Commercial Customer Cost Comparison by Regional Water Providers**

Commercial Water Customer (assume 1 1/2" meter & 5,400 cf)										
	Current CCSD	Proposed CCSD	Watsonville	Cal Water Salinas	Marina Coast Water District	Santa Cruz Municipal Utilities	Aromas Water District	Gonzales Municipal Water Works	San Jose	
Base Charge	\$ 37.61	\$ 48.72	\$ 49.83	\$ 77.04	\$ 53.94	\$ 117.59	\$ 164.00	\$ 18.34	\$ 113.80	
Volumetric Charge	\$ 72.40	\$ 75.60	\$ 164.16	\$ 156.53	\$ 239.46	\$ 237.60	\$ 261.36	\$ 96.65	\$ 226.26	
<b>Total</b>	<b>\$ 110.01</b>	<b>\$ 124.32</b>	<b>\$ 213.99</b>	<b>\$ 233.57</b>	<b>\$ 293.40</b>	<b>\$ 355.19</b>	<b>\$ 425.36</b>	<b>\$ 114.99</b>	<b>\$ 340.06</b>	

**Chart 8 – Commercial Customer Cost Comparison by Regional Water Providers**



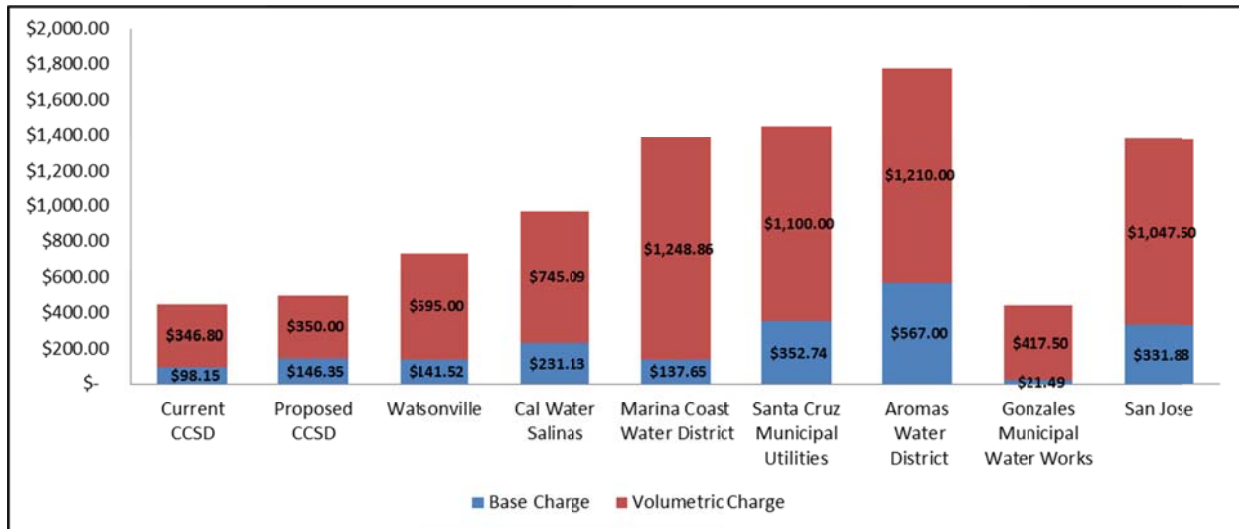
**CASTROVILLE COMMUNITY SERVICES DISTRICT**  
**Water Rate Study**

Consistent with the commercial cost comparison on the previous page, the industrial cost comparison, depicted below in Table 14 and Chart 9 again shows that the CCSD proposed rate structure is still among the lowest cost among the regional water suppliers included in the data set by a wide margin, with only the City of Gonzales being slightly lower.

**Table 14 – Industrial Customer Cost Comparison by Regional Water Providers**

Industrial Water Customer (assume 3" meter & 25,000 cf)										
	Current CCSD	Proposed CCSD	Watsonville	Cal Water Salinas	Marina Coast Water District	Santa Cruz Municipal Utilities	Aromas Water District	Gonzales Municipal Water Works	San Jose	
Base Charge	\$ 98.15	\$ 146.35	\$ 141.52	\$ 231.13	\$ 137.65	\$ 352.74	\$ 567.00	\$ 21.49	\$ 331.88	
Volumetric Charge	\$ 346.80	\$ 350.00	\$ 595.00	\$ 745.09	\$ 1,248.86	\$ 1,100.00	\$ 1,210.00	\$ 417.50	\$ 1,047.50	
<b>Total</b>	<b>\$ 444.95</b>	<b>\$ 496.35</b>	<b>\$ 736.52</b>	<b>\$ 976.22</b>	<b>\$ 1,386.51</b>	<b>\$ 1,452.74</b>	<b>\$ 1,777.00</b>	<b>\$ 438.99</b>	<b>\$ 1,379.38</b>	

**Chart 9 – Industrial Customer Cost Comparison by Regional Water Providers**



## **SECTION VI – ADDITIONAL RECOMMENDATIONS**

### **Adoption of a formal Capital Reserve Policy**

Harris & Associates recommends CCSD research and adopt a formal Capital Reserve Policy. There are numerous resources available to facilitate this endeavor including the Government Finance Officers Association (GFOA) Best Practices on financial management and the California Municipal Finance Officers various online resources and listserv. The establishment of such a policy would assist the District in the long-term financial planning of capital asset replacement, and promote a more proactive rather than reactive method of capital budgeting.

### **Consideration of Debt Financing of Major Capital Repair or Replacement**

Currently, CCSD has no long-term water utility debt financing, except for the Castroville Water Project Assessment District with a few years remaining on its debt service schedule and an outstanding balance of \$126,000 as of June 30, 2015. Given this lack of financial leverage, it may be prudent to explore funding major capital improvements in the future (beyond FYE 2020) with a form of debt financing. Examples include land secured financing (e.g. assessment & special tax districts) and tax-exempt, bank qualified loans. By using these financing mechanisms, the large capital costs of assets with long usable lives (10 years or more) can be shared among both current and future ratepayers. This chronological cost spread functions to equalize water system costs and create inter-generational equity among CCSD's water customers.

### **Annual Review of Revenue and Expenses Prior to next scheduled Rate Adjustment**

This rate study, like most in California projects revenues and expenses over a five year period. It is important to note that each of the annual rate adjustments require CCSD Board of Directors approval and proper noticing. Harris & Associates recommends CCSD review actual revenues and expenses annually to confirm its water utility financial condition. This will be particularly important during the FYE 2017 and 2018 budgeting processes, mainly due to the likelihood that by then CCSD Staff will know whether Well 6 is needed or not, and if it is how to finance it. On the other hand, if the well is not needed or grant funding will completely funds the construction, at the end of FYE 2018, CCSD projects to have achieved its minimum goal of \$3 million in fund balance. At that time, CCSD Staff and Board of Directors could decide to hold rates steady, since the minimum fund balance would be recouped (after funding the Well 2B/5 arsenic work in FYE 2016).

### **Consideration of Emergency Drought Policy**

As discussed throughout this rate study report, the current drought is very serious. Given the gravity of the situation, the CCSD Board of Directors are advised to consider an Emergency Drought Policy, particularly if the drought persists. A policy in this regard would set high-volume water use penalties upon water customers in the event of a declaration of a drought emergency by the Board of Directors. A general example of this would be a fixed amount penalty for water use that exceeds 150% of the average water consumption of a given customer class. Specifically, if the Board made the declaration, which triggers the policy, and given that average SFR monthly consumption is 1000 cf; if a SFR customer consumed more than 1500 cf in a month, a fixed dollar penalty would be added to the next month's bill. This type of structure is compliant with the CTA vs. SJC court case, and provides a means to influence lower consumption during severe droughts

