Heritage Ranch
Community Services District
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Report on

Water and Wastewater Rate Study

Submitted By:
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August 2017

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August 7, 2017

Mr. Scott B. Duffield
General Manager
Heritage Ranch Community Services District
4870 Heritage Road
Paso Robles, CA 93446

Dear Mr. Duffield:

I am pleased to present this Water and Wastewater Rate Study (Study) report for the Heritage Ranch Community Services District (District). The water and wastewater rates presented in this report have been developed based on cost of service principles following industry methods. The rates are fair and equitable for the users of the water and wastewater systems and have been established in accordance with Proposition 218.

This study included a review and analysis of the water and wastewater enterprise revenue and revenue requirements, number of customers, volumes, and current rate structure. The major objectives of the Study include the following.

- Generate positive levels of income in the Study period
- Maintain operating and capital reserves at or greater than target levels
- Maintain debt service coverage ratios at or greater than the minimum required
- Meet annual capital replacement spending from enterprise rate revenue

This report documents the findings and recommendations for the financial plans and rates for the District's water and wastewater enterprises. Tables and figures are provided throughout the report to demonstrate the calculations.

It has been a pleasure to work with District staff during the performance of this study. If there are any questions, please contact me at (949) 760-9454.

Very Truly Yours,

TUCKFIELD & ASSOCIATES

G. Clayton Tuckfield
Principal Consultant

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Water and Wastewater Rate Study

Heritage Ranch Community Services District

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Executive Summary

The Heritage Ranch Community Services District (District) engaged Tuckfield & Associates to conduct a comprehensive Water and Wastewater Rate Study (Study) for its enterprise systems. Major objectives of the Study were to develop pro forma statements of revenues and revenue requirements for each system, perform analyses to determine the costs of providing service, and design new water and wastewater rates and charges for implementation.

Water Financial Plan

The revenue and revenue requirements of the water system were identified and projected to create a forward looking financial plan for the water enterprise. Annual costs of the water system include operation and maintenance expense (O&M), annual replacement transfer, and debt service. Future O&M expenses include the District's FY 2016-17 budget expenses for the first year, and projected expenses for future years through application of inflation factors to budget year expenses.

An annual replacement transfer is included in the financial plan to pay for water system replacement capital. The annual replacement transfer is below the target level in the initial years of the financial plan, however increases to the target level by the end of ten years. Outstanding debt service includes two loans with annual payments of $103,600 and $58,700 respectively.

The District has prepared a five-year Capital Improvement Program (CIP) that includes replacements and capital improvements. The majority of the CIP includes spending on various structures, improvements, and equipment. The construction costs of the CIP total about $600,000 over the period FY 2016-17 to FY 2021-22. The CIP is expected to be financed through the annual replacement transfer and capital reserves.

An analysis was performed that compared the projected revenue using the District's current water rates with the projected revenue requirements (costs) of the water system. The analysis indicated that the current level of revenue being received is not sufficient to meet future obligations and needs to be increased by approximately 8 percent on January 1, 2018 and on each January 1 for the remaining years of the Study. Revenue increases are recommended to adequately meet future obligations, debt coverage requirements, and other financial planning criteria. The water financial plan is presented in Table 10.

Current Water Rates

The current water rates consist of fixed charges by meter size and variable charges by usage block or tier. The tiered variable charges apply to blocks of water consumption by meter size for all customers. Table 3 provides the current water rates charged to water customers of the District.

Proposition 218

The current rate structure and rates were established with the District's last rate study in 2009. The rates included a three-tier rate structure designed to encourage conservation. Recent findings from the San Juan Capistrano court decision (Court Decision) regarding the legality of water rate structures suggests that the District's current water rate structure no longer meets the tests of Proposition 218. The findings of the Court Decision indicate

that rates not only need to be proportional to cost of service, but they need to be proportional to cost of service within rate tiers of such rate structures as well.

Proposed Water Rate Structure and Rates

The proposed water rate structure keeps the fixed charge structure by meter size but modifies the three-tiered variable charge structure to a uniform volume charge. Therefore, all customers of the water system will be charged the same uniform consumption rate. Table ES-1 presents the water rates to be adopted January 2018 and for future years.

Table ES-1
Proposed Water Fixed and Variable Charges

	Current Rate	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
Meter Size	Fixed Charge ($ per month)					
5/8" and 3/4"	$20.41	$20.03	$21.64	$23.37	$25.24	$27.24
1"	$25.98	$27.27	$29.48	$31.84	$34.41	$37.14
1.5"	$33.40	$44.61	$48.23	$52.13	$56.33	$60.85
2"	$53.81	$66.78	$72.22	$78.07	$84.38	$91.16
3"	$204.11	$137.31	$148.55	$160.58	$173.61	$187.53
	Variable Charge ($ per HCF)					
Example Meter Size (5/8" or 3/4")						
Tier 1 - 0 to 2 units	$0.00					
Tier 2 - 2 to 21 units	$2.80					
Tier 3 - Over 21	$3.46					
All Consumption		$2.58	$2.80	$3.03	$3.29	$3.56

Water Bill Impacts

Table ES-2 presents the impacts to single-family residential (SFR) bills from the implementation of the proposed January 1, 2018 water rates. For a SFR customer with a 5/8-inch or 3/4-inch meter using the average consumption of 7 hundred cubic feet (HCF) monthly, the bill will increase from $34.41 to $38.09, an increase of $3.68, or 10.7 percent. The 10.7 percent increase is higher than the overall 8 percent revenue increase required due to the water rate structure change from the current 3-Tier water rate structure to a uniform rate structure shown above in Table ES-1.

Table ES-2 also provides impacts to SFR bills with a 5/8-inch meter or 3/4-inch meter for the January 1, 2019 rate increase. The impact to all water bills from this increase is about 8 percent. Future rate increases will have a similar 8 percent increase to water bills as the January 1, 2019 increase.

Chart ES-1 has been prepared to compare the District's average SFR water bill with those of other communities at the same consumption. The chart indicates that with the January 2018 rates, a SFR customer with a monthly consumption of 7 HCF will experience a bill that is in the lower half of the communities listed.

Table ES-2
Comparison of Current Single-family Residential Monthly Water Bill with 5/8-inch or 3/4 -inch Meter Size with Proposed Monthly Bill Using January 2018 and January 2019 Water Rates

		Current Bill			January 1, 2018 Proposed Bill				
Description	Use (HCF)	Service Charge	Volume Charge	Current Bill	Service Charge	Volume Charge	Proposed Bill	Dollar Change	Percent Change
	0	$20.41	$0.00	$20.41	$20.03	$0.00	$20.03	($0.38)	-1.9%
Very Low	1	$20.41	$0.00	$20.41	$20.03	$2.58	$22.61	$2.20	10.8%
Low	2	$20.41	$0.00	$20.41	$20.03	$5.16	$25.19	$4.78	23.4%
Median	5	$20.41	$8.40	$28.81	$20.03	$12.90	$32.93	$4.12	14.3%
Average	7	$20.41	$14.00	$34.41	$20.03	$18.06	$38.09	$3.68	10.7%
High	10	$20.41	$22.40	$42.81	$20.03	$25.80	$45.83	$3.02	7.1%
Very High	15	$20.41	$36.40	$56.81	$20.03	$38.70	$58.73	$1.92	3.4%
	20	$20.41	$50.40	$70.81	$20.03	$51.60	$71.63	$0.82	1.2%

		January 1, 2018 Proposed Bill			January 1, 2019 Proposed Bill				
Description	Use (HCF)	Service Charge	Volume Charge	Proposed Bill	Service Charge	Volume Charge	Proposed Bill	Dollar Change	Percent Change
	0	$20.03	$0.00	$20.03	$21.64	$0.00	$21.64	$1.61	8.0%
Very Low	1	$20.03	$2.58	$22.61	$21.64	$2.80	$24.44	$1.83	8.1%
Low	2	$20.03	$5.16	$25.19	$21.64	$5.60	$27.24	$2.05	8.1%
Median	5	$20.03	$12.90	$32.93	$21.64	$14.00	$35.64	$2.71	8.2%
Average	7	$20.03	$18.06	$38.09	$21.64	$19.60	$41.24	$3.15	8.3%
High	10	$20.03	$25.80	$45.83	$21.64	$28.00	$49.64	$3.81	8.3%
Very High	15	$20.03	$38.70	$58.73	$21.64	$42.00	$63.64	$4.91	8.4%
	20	$20.03	$51.60	$71.63	$21.64	$56.00	$77.64	$6.01	8.4%

Chart ES-1
Single-family Residential Monthly Water Bills with 3/4-inch or Smaller Meter Using 7 HCF
For Rates in Effect March 2017

Note: Above table uses water rates in effect March 2017. District January 2018 bill is based on the rate structure and rates in Table ES-1.

Wastewater Financial Plan

The revenue and revenue requirements of the wastewater system were identified and projected to create a forward looking financial plan of the wastewater enterprise. Annual costs include operation and maintenance expense (O&M), annual replacement transfer, and new debt service that includes a debt service reserve payment. Future O&M expenses include the District's FY 2016-17 Budget expenses for the first year and projected expenses for future years through application of inflation factors to budget year expenses.

An annual replacement transfer is included in the financial plan to pay for wastewater system capital replacement. The annual amount is lower than the target level in the initial years of the financial plan, however increases to the target level by the end of the ten years. The District currently does not have any outstanding wastewater debt, however new debt is proposed in FY 2021-22 with this Study in the amount of $500,000 to finance a portion of the headworks screening, influent metering, and related improvements. The 2021-22 debt is estimated to have annual payments of about $34,400 and a debt service reserve payment in the amount $3,400 annually for ten years.

The District has prepared a five-year capital improvement program (CIP) spending plan for the wastewater system. Major projects of the CIP include the headworks improvements discussed above, sludge removal, and lift station #3 and #5 rehabilitations. The CIP expenditures total more than $2 million for the period FY 2016-17 to FY 2021-22. The CIP is planned to be funded through the annual replacement transfer, the FY 2021-22 debt proceeds, and capital reserves.

An analysis was performed that compared the projected revenue using the District's current wastewater rates with the projected revenue requirements (costs) of the wastewater system. The analysis indicated that the current level of revenue being received needs to be increased by 6.5 percent annually on January 1, 2018 and on each January 1 thereafter for the Study period. The revenue increases are required to adequately meet future obligations, debt coverage requirements, and other financial planning criteria. The wastewater financial plan is presented in Table 25.

Current Wastewater Rates

The current wastewater rates consist of monthly fixed charges for all customers. Residential are charged a flat charge per dwelling unit per month. Other customers are charged as a multiple to the Residential charge. For example, RV spaces are charge 0.8 times the Residential charge. Table ES-3 provides the current wastewater charges by customer group.

Proposed Wastewater Rate Structure and Rates

The proposed wastewater rates are calculated using the District's existing Equivalent Dwelling Unit (EDU) methodology. One EDU is defined as the impact to the wastewater system from a residential dwelling unit. Other customer groups are charged as a multiple of EDU's in relation to the Residential group. Table ES-3 presents the proposed wastewater rates for the next five years.

Wastewater Bill Impacts

The impact to wastewater bills from the proposed rate increases can be determined from inspection of Table ES-3. For a SFR customer, the monthly wastewater bill will increase from $26.09 to $27.79, an increase of $1.70, or 6.5 percent.

Chart ES-2 has been prepared to compare District's SFR wastewater bill with those of other communities. The chart indicates that District's SFR wastewater bill is in the lower half of the communities listed.

Table ES-3
Proposed Wastewater Monthly Fixed Charges

Description	EDU Ratio	Current Charge	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
Residential/Condo	1.0	$26.09	$27.79	$29.59	$31.52	$33.56	$35.75
RV Space	0.8	$20.87	$22.23	$23.67	$25.21	$26.85	$28.60
Commercial	1.0	$26.09	$27.79	$29.59	$31.52	$33.56	$35.75
Camp Restroom	2.1	$55.36	$58.97	$62.79	$66.88	$71.21	$75.86
Dump Station	8.45	$220.34	$234.70	$249.90	$266.20	$283.43	$301.92
Holiday Condo		$782.57	$833.70	$887.70	$945.60	$1,006.80	$1,072.50

Chart ES-2
Single-family Residential Monthly Wastewater Bills
For Rates in Effect March 2017

Note: Above table uses wastewater rates in effect March 2017. District January 2018 bill is based on the rate structure and rates in Table ES-3.

Introduction

The Heritage Ranch Community Services District (District) engaged Tuckfield & Associates to conduct a comprehensive Water and Wastewater Rate Study (Study) for its water and wastewater enterprise systems. Major objectives of the Study are to develop a pro forma statement of revenues and revenue requirements for each enterprise, perform analyses to determine the cost of providing service, and design new water and wastewater rates and charges for implementation.

Background

The Heritage Ranch Community Services District is an unincorporated community in San Luis Obispo County, California. The District is located in the north west portion of San Luis Obispo County approximately 15 miles northwest of the City of Paso Robles. The District was formed in 1990 to provide water and wastewater service for the Heritage Ranch community. The District's customer base consists mostly of residential customers with some commercial, retail, and public facility customers. Water and wastewater service is identified in separate enterprise funds of the District.

The District obtains its water supply from the Gallery Well located in the Nacimiento river which is fed through release of water through the Lake Nacimiento dam. The District has an 1,100 AFY entitlement to Lake Nacimiento water. Water is delivered through a water treatment plant and distribution system consisting of pump stations, storage tanks, pressure reducing valves, and over 27 miles of water pipelines ranging in size from 4 to 12 inches.

The District owns and operates a wastewater collection, treatment, and disposal system. Wastewater is collected through a system of sewer gravity mains and several lift stations. The wastewater treatment plant provides secondary treatment through a lagoon/ponding system with a permitted capacity of 0.4 million gallons per day (MGD). Treated wastewater is discharged into a drainage way that is tributary to the Nacimiento river.

Legal Framework and Industry Methodology

Proposition 218

Proposition 218 was approved by California voters in 1996. The initiative added Articles 13 C and D to the California Constitution, providing a definition of a "fee" and providing the requirements for new fees or to increase fees and charges. Article 13D states the requirements for new or increased fees and charges as described below.

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 fees or charges shall not be used for any purpose other than that for which the fee or charge was imposed.

3. The amount of the 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.

5. The agency shall conduct a public hearing upon the proposed fee or charge not less than 45 days after mailing the notice of the proposed fee or charge to the record owners of each identified parcel upon which the fee or charge is proposed for imposition. At the public hearing, the agency shall consider all protests against the proposed fee or charge. If written protests against the proposed fee or charge are presented by a majority of owners of the identified parcels, the agency shall not impose the fee or charge.

Water and wastewater rates and charges are considered property-related fees under Proposition 218 and must comply with the substantive and procedural requirements stated above.

Objectives

The objectives of this Study are to (1) review the current and future financial status of each of the water and wastewater enterprises, (2) make any adjustments to the revenue being received to ensure that the financial obligations are being met now and in the future, including adequate reserves and debt service coverage, and (3) design water and wastewater rates that generate the required revenue while being fair and equitable for its customers. Additionally, the Study also sought to provide the following.

- Revenue sufficiency to fund operating and capital needs
- Appropriate levels of operating and capital reserves
- Cost of service allocations following appropriate standards, regulations, and guidelines
- Rates that are consistent with industry practice
- Ease of understanding and administration

Scope of the Study

This Study includes the findings and recommendations of analyzing each of the water and wastewater enterprise's financial status and related CIP. Historical trends were analyzed from data supplied by the District showing the number of customers, volumes, revenue, and revenue requirements.

Revenue requirements of each enterprise includes operation and maintenance expense, routine capital outlays, replacement transfers, debt service, and additions to reserves. Changing conditions such as additional facilities, system growth, employee staffing levels, and non-recurring maintenance expenditures are recognized. Inflation for ongoing expenditures is included to reflect cost escalation.

The financial plan and rates developed herein are based on funding of the capital improvement plan as stated as well as estimates of operation and maintenance expenses developed from information provided by the District. Deviation from the financial plans, construction cost estimates and funding requirements, major operational changes, or other financial policy changes that were not foreseen, may result in the need for lower or higher revenue than anticipated. It is suggested that the District conduct an update to the rate study at least every three years for prudent rate planning.

Assumptions

Several assumptions were used to conduct the Study for the period FY 2016-17 to FY 2021-22. The assumptions included growth rates in customer accounts and annual consumption, expense inflation factors, and other assumptions used for projecting revenue and expense. The financial planning assumptions are provided below in Table 1.

Table 1
Assumptions and Planning Factors

Description	Value
Annual Account & Demand growth [1]	
Single-family Residential	0.5%
All Other	0.0%
Property Taxes and Interest Income	
Property Tax Revenue Increase	1.0%
Interest earnings on fund reserves (annual)	0.65%
Cost Escalation	
Personnel Services [2]	3.0%
Electrical Power	2.0%
Chemicals	2.0%
All Other Operations & Maintenance	2.0%
Capital	3.0%

[1] Annualized growth in water accounts is based on discussions with staff.
[2] Personnel Services growth in staffing, promotions and inflation are expected to increase by 3.0% annually.

District Reserve Policy

The District has a written reserve policy adopted in Resolution 14-01 on March 20, 2014. The reserve policy sets forth goals for maintaining various reserves for water and wastewater operations and capital spending. The reserve policy provides a basis to deal with unanticipated reductions in revenues, changes in the costs of providing services, fixed asset repair and replacement, natural disaster, and other issues. It also provides guidelines to maintain the financial health and stability of the enterprise funds.

The reserve types and the amount of reserves used in this Study are discussed below.

Operating Reserve – The purpose of the Operating Reserve is to provide working capital to meet cash flow needs during normal operations and support the operation, maintenance and administration of the utility. This reserve

ensures that operations can continue should there be significant events that impact cash flows. The target balance to be maintained is 180 days of annual budgeted expenses.

Capital Replacement Reserve – This reserve has been created for this Study and is separated from the Capital Facility Replacement Reserve defined in Resolution 14-01 to exclude restricted reserves. The Capital Replacement Reserve is used to fund future replacement of assets and capital projects. The target balance is equal to annual depreciation expense.

Water Debt Reserve – The Water Debt Reserve is required by the Department of Water Resources Loan and the State Revolving Fund loan agreement that are outstanding with the District. The purpose of the debt reserve is to provide sufficient funds to meet the annual debt service of these two loans and when fully funded will meet the final payment of the loans. The target balance is established at $250,000.

Maintenance/Repair Equipment Reserve – The Maintenance/Repair Equipment Reserve is used to fund maintenance and repair of water and sewer facilities. The target balance is equal to $288,000.

District Beginning Balances and Reserve Targets

The reserve fund balances discussed above are used in developing the financial plans for the water and wastewater utilities. The District's beginning fund balances are listed in Table 2 below as of June 30, 2016. Target Reserves are also stated in the table.

While there are several reserve funds in Resolution 14-01 that have balances that are lower than their targets, the financial plans developed in this Study only address the increasing and/or maintaining of the Operating Reserve and the Capital Replacement Reserve.

Table 2
June 30, 2016 Estimated Beginning Cash Balances and Reserve Targets

Reserve Type	Water System		Wastewater System	
	Reserve Balance	Reserve Target	Reserve Balance	Reserve Target
Operating Reserve	$446,000	$446,000	$287,000	$287,000
Capital Replacement Reserve	105,000	367,000	1,013,200	148,000
Debt Reserve	250,000	250,000	0	0
Maint/Repair Equipment Reserve	0	144,000	144,000	144,000
Total	$801,000	$1,782,000	$1,444,200	$704,000

Water Financial Planning

Financial planning for the water system includes identifying and projecting revenues and revenue requirements for a five-year planning period. Estimates of revenue from various sources are compared with the projected revenue requirements of the water system. This comparison allows the review of the adequacy of existing revenue to meet annual obligations, and provide the basis for any rate adjustments. New water rates and charges are created to recover the District's annual operating and capital costs associated with the water system.

This financial planning section of the report discusses current water rates, current user classifications, projected revenues and revenue requirements, capital improvement expenditures and financing sources, and proposed revenue adjustments.

Current Water Rates

The current water rates consist of fixed and variable charges to residential and non-residential customers. All customers are charged a monthly fixed charge by meter size. Additionally, customers are charged for consumption based on a three-tier variable charge structure where rates are applied to blocks of water by meter size. Table 3 provides the current water rates of the water system.

Table 3
Current Water Rates

	Meter Size				
	5/8" and 3/4"	1"	1.5"	2"	3"
Monthly Fixed Charges	$20.41	$25.98	$33.40	$53.81	$204.11

	Variable	Block by Meter Size				
Tier	Rate	5/8" and 3/4"	1"	1.5"	2"	3"
Tier 1	$0.00	0-2 HCF	0-3 HCF	0-4 HCF	0-6 HCF	0-10 HCF
Tier 2	$2.80	2-21 HCF	3-60 HCF	4-125 HCF	6-324 HCF	10-650 HCF
Tier 3	$3.46	Over 21	Over 60	Over 125	Over 324	Over 650

Water User Classifications

Number of Customers

The District currently classifies water customers as Residential, RV space, Commercial, and Irrigation. Residential customers account for more than 88 percent of the total customers served by the water system. Growth is projected to occur only in Residential accounts at a rate of 0.50 percent annually or 8 accounts added each year, following the assumptions listed in Table 1. Table 4 provides the historical and projected number of customers by classification.

Number of Water Meters

Table 5 provides a summary of the number of current and projected meters by size. The majority of customers have 5/8-inch and 3/4-inch meters installed at the service location.

Table 4
Projected Water Customers by Classification

	Actual	Projected					
Customer Class	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**
Number of Accounts							
Residential	1,612	1,620	1,628	1,636	1,644	1,652	1,660
RV Space	179	179	179	179	179	179	179
Commercial	20	20	20	20	20	20	20
Irrigation	7	7	7	7	7	7	7
Total Accounts	1,818	1,826	1,834	1,842	1,850	1,858	1,866
Fire Protection							
Public Fire Protection	235	235	235	235	235	235	235
Private Fire Protection	6	6	6	6	6	6	6
Total Fire Protection Hydrants	241	241	241	241	241	241	241

[1] Accounts are forecast to increase based on the assumed growth rate of 0.5% annually.

Table 5
Projected Number of Water Meters

	Actual	Projected					
Description	**FY 15-16**	**FY 16-17**	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**
Active Water Accounts [1]							
5/8 & 3/4 inch	1,637	1,644	1,652	1,659	1,666	1,673	1,680
1 inch	138	139	139	140	141	141	142
1-1/2 inch	31	31	31	31	31	32	32
2 inch	9	9	9	9	9	9	9
3 inch	3	3	3	3	3	3	3
Total Accounts	1,818	1,826	1,834	1,842	1,850	1,858	1,866

[1] Historical accounts for FY 15-16 are provided through District billing records. Excludes fire protection.

Water Sales Volumes

Table 6 provides the historical and projected water sales volume by customer classification. Water sales volumes were projected by recognizing the growth in the number of accounts and the FY 2015-16 use per customer. From the table, the largest user of the water system is the Residential customer group. The second largest water consumer in terms of water sales volume is Commercial customers.

Table 6
Projected Water Consumption (in HCF)

Description	Actual	Projected					
	FY 15-16	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Residential	127,123	127,754	128,385	129,016	129,647	130,277	130,908
RV Space	1,717	1,717	1,717	1,717	1,717	1,717	1,717
Commercial	6,656	6,656	6,656	6,656	6,656	6,656	6,656
Irrigation	2,592	2,592	2,592	2,592	2,592	2,592	2,592
Total Projected Consumption	138,088	138,719	139,350	139,981	140,612	141,242	141,873

[1] Forecast assumes that the use per customer from FY 15-16 and applied to the number of customers.

Water Financial Plan

The financial plan provides the means of analyzing the revenue and revenue requirements of the water system and its impact on reserves as well as the ability to fund on-going operation and maintenance expense and capital infrastructure requirements. This section of the report discusses the projection of revenue, operation and maintenance expenses, capital improvement needs of the water system and its financing, debt service requirements, and revenue adjustments needed to maintain a sustainable water enterprise.

Revenues

The District receives operating and capital revenue from several sources. Operating revenue is received from rates and charges for water service. Revenue from water rates is projected by applying the current water rates to the projected number of accounts and consumption volume. Miscellaneous revenue received includes penalties/late fees, water turn on fees, interest income and other sources. Table 7 presents the projected revenue from current water rates.

Table 7
Projected Rate-based Water Revenue Using Existing Rates

Description	Projected					
	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Water Service Revenues						
Fixed Charges [1]	$471,567	$473,527	$475,553	$477,579	$479,694	$481,721
Variable Charges [2]	294,706	296,036	297,366	298,697	300,025	301,355
Total Revenues From Current Rates	$766,273	$769,563	$772,919	$776,276	$779,719	$783,076

[1] FY 16-17 and forecast years' revenue calculated by multiplying current water service rate by the number of projected meters.
[2] FY 16-17 and forecast years' revenue calculated by multiplying projected water sales by the current varible rates.

Revenue Requirements

Revenue requirements of the water system include operation and maintenance expense, annual replacement transfer, and new debt service payments. Each of these items are discussed below.

Operation and Maintenance Expense

Operation and maintenance expenses (O&M) are an on-going obligation of the water system and such costs are normally met from water service revenue. O&M includes the cost to operate and maintain the water supply,

reservoirs, and distribution system facilities. Costs also include technical services and other general and administrative expenses.

O&M has been projected recognizing the major expense categories of personnel services, electric power expense, chemicals, all other expenses, and capital outlay. Personnel costs consist of salaries and benefits expense of those personnel directly involved with providing water service. Future personnel costs are projected to increase by 3 percent annually. Electric power expense is projected to increase annually at 2 percent while chemicals expense increases by 2 percent. All other O&M expense is projected to increase by 2 percent annually. Table 8 provides a summary of the O&M expenses for the Study period.

Table 8
Projected Water Operation and Maintenance Expenses

Description	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Salaries and Benefits	$337,700	$347,831	$358,265	$369,014	$380,083	$391,485
Electricity	125,000	127,500	130,050	132,651	135,304	138,010
Water Purchase	23,114	23,114	23,114	23,114	23,114	23,114
Chemicals	25,000	25,500	26,010	26,530	27,061	27,602
All Other	91,400	93,228	95,092	96,992	98,932	100,912
G&A	290,608	296,420	302,349	308,396	314,564	320,854
Total O&M Expense	$892,822	$913,593	$934,880	$956,697	$979,058	$1,001,977

Annual Replacement Transfer

Water line replacements occur on an annual basis for most water systems. The District plans for water line replacements in its capital planning and these replacements occur from time to time during the fiscal year. An annual amount is transferred from the operating fund to aid in funding these replacements. The annual amount is targeted to be approximately equal to depreciation expense, which increases as new fixed assets are booked from the District's capital improvement program. The replacement transfer gradually increases to this target level over a ten-year period.

Annual Debt Service

The District has two outstanding loans on the water system. The Department of Water Resources (DWR) loan has annual debt service payments of about $103,600 and will be retired in FY 2029. The District also has a State Water Resources Control Board (SWRCB) loan with annual payments of about $65,250 (including reserve payments) which will be retired in FY 2036.

Water Capital Improvement Program

The District has developed a Capital Improvement Program (CIP) provided in Table 9 that lists capital expenditures for FY 2016-17 through FY 2020-21. Over this period the District projects that it would expend approximately $600,000. The major improvements include a vertical well, pressure reducing valves, pump rehabilitations. Other projects include structure improvements and equipment.

Table 9
Water Capital Improvement Program With Sources and Uses of Funds

	Budget	Projected				
Description	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Current Capital Improvement Projects (CIP) [1]						
Structures/Improvements	$113,000	$0	$0	$43,700	$11,300	$0
Equipment	60,000	-	-	-	168,800	-
Vertical Well	-	-	-	69,900	-	-
WTP Actuator Replace	-	-	-	-	-	8,100
Rebuild Treated Water Pumps #3 and #4	-	-	-	-	-	40,600
Pump Station Covers	-	-	-	-	-	34,800
Equestrian & Wateview PRV	-	-	-	-	-	58,000
Total Water CIP	**$173,000**	**$0**	**$0**	**$113,600**	**$180,100**	**$141,500**
Sources and Uses of Capital Funds						
Beginning Year Balance [2]	$105,000	$46,172	$152,236	$308,430	$404,318	$492,563
Replacement Transfer from Operations	114,172	106,064	156,194	209,488	268,345	335,588
Capital Improvement Projects (CIP)	(173,000)	-	-	(113,600)	(180,100)	(141,500)
Ending Balance	**$46,172**	**$152,236**	**$308,430**	**$404,318**	**$492,563**	**$686,651**

[1] CIP Source: FY 16-17 CIP.
[2] The available cash balance includes Capital Replacement reserves.

The CIP is funded through use of capital reserves and the annual replacement transfer. The sources and uses of funds for the capital fund is shown near the bottom of Table 9 and illustrates how the CIP will be funded.

Water Financial Plan

A financial plan has been prepared that includes the revenues and revenue requirements that were identified for the water system and is presented in Table 10. The plan incorporates specific financial planning criteria to provide guidance to maintain the health of the water utility on an on-going basis. The criteria included the following.

- Generate positive levels of income in each year of the Study period
- Maintain the operating and capital reserves at or greater than target levels
- Maintain debt service coverage ratios at or greater than the minimum required
- Maintain the annual capital replacement transfer

Proposed Revenue Adjustments

Table 10 provides the annual revenue increases recommended to meet the financial planning criteria for the five-year Study period. The financial plan indicates that an approximate 8 percent increase is recommended on January 1, 2018 and each January for the remainder of the Study period. The increases are necessary to meet the planning criteria discussed above.

Table 10
Water Financial Plan

Description	Projected				
	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Proposed Revenue Increase (January 1)	**8.0%**	**8.0%**	**8.0%**	**8.0%**	**8.0%**
Sources of Funds					
Rate-based Revenues, Existing Rates [1]	$769,563	$772,919	$776,276	$779,719	$783,076
Total Additional Water Sales Revenue [2]	30,783	95,224	165,390	241,792	324,905
Miscellaneous Income [3]	389,100	390,800	392,500	394,200	395,900
Interest Income	3,580	4,500	5,388	6,061	7,053
Total Sources of Funds	$1,193,026	$1,263,443	$1,339,554	$1,421,772	$1,510,934
Uses of Funds					
O&M and Capital Outlay	$913,593	$934,880	$956,697	$979,058	$1,001,977
Replacement Transfer (Depr)	106,064	156,194	209,488	268,345	335,588
Current Debt Service	162,369	162,369	162,369	162,369	162,369
Total Uses of Funds	$1,182,026	$1,253,443	$1,328,554	$1,409,772	$1,499,934
Net Funds Available	**$11,000**	**$10,000**	**$11,000**	**$12,000**	**$11,000**
Available Reserves					
Beginning available reserves [4]	$446,000	$457,000	$467,000	$478,000	$490,000
Additions (reductions)	11,000	10,000	11,000	12,000	11,000
Ending available reserves	**$457,000**	**$467,000**	**$478,000**	**$490,000**	**$501,000**
Target Reserves [5]	$457,000	$467,000	$478,000	$490,000	$501,000
Above (below) Target	$0	$0	$0	$0	$0
Debt Service Coverage					
Net Revenues	$279,433	$328,563	$382,857	$442,714	$508,957
Annual Debt Service	$162,369	$162,369	$162,369	$162,369	$162,369
Coverage	172%	202%	236%	273%	313%

[1] Projected using the existing rates.
[2] Additional revenue from proposed rate adjustments.
[3] Miscellaneous income including hookup fees, turn-on fees, late fees, standby charges, and property taxes.
[4] The available beginning FY 16-17 cash balance provided by City.
[5] Target reserve estimated at 180 days of operation and maintenance expense.

Cost of Service

This section of the report discusses how the water system's operating and capital costs are allocated for use in designing rates. Establishing rates in California requires that the agency responsible for imposing property-related fees create a nexus between the cost of providing service and the rates to be imposed.

Industry Methodology

This Study uses methodologies from the American Water Works Association (AWWA) to allocate costs in an appropriate manner. AWWA is an industry trade organization that provides guidance on operations and management of water utilities. General principles are provided to assist agencies with the design of water rates such that the rates may be consistent with local requirements while also recognizing state laws and legal framework. The AWWA guidelines have been used to conduct this Study and have been used in the design of the District's water rates while also following Proposition 218 and the recent San Juan Capistrano court decision.

The annual costs of providing water service from the financial plan are allocated to cost components according to industry standards provided in the American Water Works Association (AWWA) Manual M1. The methodology provides the basis to design rates to generate adequate revenue to meet estimated annual revenue requirements from the financial plan. Costs are then recovered through fixed charges and variable charges.

Costs of Service to be Allocated

The annual cost of service consists of O&M expenses and capital costs of the water system. O&M expenses include costs related to water distribution, maintenance of the facilities, and general and administrative costs. Capital costs include annual capital replacement discussed in the financial plan.

To design rates for the water system, costs need to first be allocated to water system cost components based on the operating characteristics and design of the water system facilities. Cost allocations consider the average quantity of water consumed as well as the peak rate at which water is consumed. The water system is designed to serve average and peak demands, and costs that are related to serving average and peak demands are allocated in a manner such that they may be recovered appropriately.

The cost allocation components for water service are Base, Peaking, Meters and Services, Customer, and Direct Fire Protection. A five-year average of the operating and capital costs of the water system are assigned to each of these components. The result is a percentage allocation of the annual costs of service to each cost component which is then applied to the annual revenue requirement. The total cost to be recovered from the users of the water system by cost component for each year of the Study is presented in Table 11.

Water Rate Design

The cost of service analyses described in the previous section provides the basis for water rate design. The goal of the design of rates is to achieve fairness while ensuring that each customer class pays its fair share of costs. Rates should be simple to administer, easy to understand, and comply with regulatory requirements. This section describes how water rates and charges are designed and includes the proposed schedule of water rates for implementation.

Table 11
Allocation of Revenue Requirements to Cost Component

Description	5-Year Average	Base	Peaking	Meters/Serv	Customer	Direct Fire Protection
Average Annual O&M						
Salaries and Benefits	$358,580	$135,204	$196,368	$25,201	$0	1,808
Maintenance and Supplies						
Electricity	130,101	108,812	21,289	-	-	-
Chemicals	26,020	26,020	-	-	-	-
Meters/Equip.	9,367	-	-	9,367	-	-
Telephone/Internet	4,371	437	-	-	3,934	-
Other Maintenance and Supplies	104,504	53,802	44,571	5,720	-	410
Total Maintenance and Supplies	$274,363	$189,071	$65,860	$15,087	$3,934	$410
General and Administration	$299,442	$102,313	$130,125	$21,758	$44,049	$1,198
Total Average Annual O&M	$932,385	$426,588	$392,353	$62,046	$47,983	$3,416
Average Annual Capital Costs						
Replacement Transfer (Depr)	$170,853	$64,420	$93,563	$12,007	$0	861
Current Debt Service	162,369	61,222	88,918	11,411	-	819
Total Average Capital	$333,222	$125,642	$182,481	$23,419	$0	$1,680
Revenue Offsets	($361,108)	($165,215)	($151,956)	($24,030)	($18,583)	($1,323)
Total Average Revenue Requirement	$904,499	$387,014	$422,878	$61,435	$29,399	$3,773
Percentage Allocation		42.8%	46.8%	6.8%	3.3%	0.4%

Cost Allocation Summary	Year	Annual Revenue Requirement	Base	Peaking	Meters/Serv	Customer	Direct Fire Protection
	FY 17-18	$831,128	$355,621	$388,575	$56,451	$27,014	$3,467
	FY 18-19	901,533	385,745	421,491	61,233	29,303	3,761
	FY 19-20	977,884	418,414	457,188	66,419	31,784	4,079
	FY 20-21	1,060,799	453,892	495,952	72,051	34,479	4,425
	FY 21-22	$1,150,596	$492,313	$537,935	$78,150	$37,398	$4,800

Proposed Rate Structure

The recommended water rates include modifying the current rate structure such that the fixed charge by meter size remains but the variable charge is modified to provide a uniform volume charge for all customers. The design of the fixed charges and variable charges are discussed below.

Proposed Fixed Charges

The proposed fixed charges recover the Peaking, Meters and Services, and Customer costs of service identified from Table 11 and recovers costs related to public fire protection. Peaking costs are recovered on the basis of meter capacity ratios while Meters and Services costs are recovered based on meter and service ratios, both provided by AWWA. Customer and public fire protection costs are recovered based on the number of bills issued.

Table 12 below presents the design of the proposed monthly fixed charges for water customers. The current fixed charges generate about 61 percent of revenue from water rates. The proposed fixed charges generate approximately 57 percent of the revenue from water rates.

Table 12
Design of Fixed Charges

Customer Service Cost	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Customer Cost	$27,014	$29,303	$31,784	$34,479	$37,398
Public Fire Protection Cost	143,095	154,872	167,615	181,312	196,228
Total Customer Costs	$170,109	$184,175	$199,399	$215,791	$233,626
Number of Bills	22,008	22,104	22,200	22,296	22,392
Customer Cost per Unit	$7.73	$8.33	$8.98	$9.68	$10.43

Meters and Services Cost	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Meters and Services Cost	$56,451	$61,233	$66,419	$72,051	$78,150
Number of Equivalent Meters & Services	23,200	23,300	23,399	23,503	23,602
Meters and Services Cost per Unit	$2.43	$2.63	$2.84	$3.07	$3.31

Peaking Cost	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Peaking Costs Less Fire Protection	244,825	265,919	288,824	313,843	340,856
Number of Equivalent Meters	24,804	24,908	25,012	25,136	25,240
Peaking Cost per Unit	$9.87	$10.68	$11.55	$12.49	$13.50
Base Fixed Charge - 5/8" and 3/4"	$20.03	$21.64	$23.37	$25.24	$27.24

Fixed charges for meter sizes greater than 5/8 & 3/4 inch are increased as shown below in Table 13 for FY 2017-18. The Meter and Services charge increases through application of meter and service cost ratios while the Peaking charge increases with meter capacity ratios. Public fire protection and Customer charges are charged per bill and do not increase with meter size. The charges are summed to provide the total monthly charge by meter size as shown in the last column of Table 13.

Table 13
Design of Fixed Charges by Meter Size
FY 17-18

Meter Size	Meter & Service Ratio	Meters & Services Charge	Meter Capacity Ratio	Peaking Charge	Fire Protection Charge	Customer Charge	Total Monthly Charge
inches							
5/8" and 3/4"	1.00	$2.43	1.00	$9.87	$6.50	$1.23	$20.03
1"	1.27	$3.09	1.67	$16.45	$6.50	$1.23	$27.27
1.5"	1.64	$3.98	3.33	$32.90	$6.50	$1.23	$44.61
2"	2.64	$6.41	5.33	$52.64	$6.50	$1.23	$66.78
3"	10.00	$24.30	10.67	$105.28	$6.50	$1.23	$137.31

The fixed charges for future years are designed in the same manner as discussed above and are presented in Table 14.

Table 14
Proposed Water Fixed Charges

	Current Rate	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
Meter Size	Fixed Charge ($ per month)					
5/8" and 3/4"	$20.41	$20.03	$21.64	$23.37	$25.24	$27.24
1"	$25.98	$27.27	$29.48	$31.84	$34.41	$37.14
1.5"	$33.40	$44.61	$48.23	$52.13	$56.33	$60.85
2"	$53.81	$66.78	$72.22	$78.07	$84.38	$91.16
3"	$204.11	$137.31	$148.55	$160.58	$173.61	$187.53

Private Fire Protection Fixed Charges. Annual costs allocated to the Fire Protection cost component are separated into Public and Private Fire Protection costs. Public Fire Protection costs are included into the monthly service charges as shown in Table 12 and Table 13. Private Fire Protection costs are recovered from those customers that receive the direct fire protection benefit. The monthly cost by equivalent fireline size is provided in Table 15 and the monthly private fire protection charges are designed as shown in Table 16.

Table 15
Design of Private Fire Protection Charges

Private Fire Protection Cost	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Annual Private Fire Protection Cost	$4,122	$4,461	$4,828	$5,222	$5,651
Private Fire Protection Eq. Firelines	83.2	83.2	83.2	83.2	83.2
Private Fire Protection ($/mo, 6-inch)	$49.51	$53.59	$57.99	$62.73	$67.88

Table 16
Proposed Private Fire Protection Charges

Fireline Size	Fireline Ratio	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
inches						
1"	0.01	$0.44	$0.48	$0.52	$0.56	$0.61
1.5"	0.03	$1.29	$1.40	$1.51	$1.64	$1.77
2"	0.06	$2.75	$2.98	$3.23	$3.49	$3.78
2.5"	0.10	$4.95	$5.36	$5.80	$6.27	$6.79
3"	0.16	$8.00	$8.66	$9.37	$10.13	$10.97
4"	0.34	$17.05	$18.45	$19.96	$21.59	$23.37
6"	1.00	$49.51	$53.59	$57.99	$62.73	$67.88
8"	2.13	$105.51	$114.19	$123.58	$133.67	$144.66
10"	3.83	$189.75	$205.36	$222.24	$240.39	$260.15

Proposed Variable Charges

Variable charges are designed to recover the Base costs for all customers. The proposed variable charges are designed to be uniform volume charges that apply to all customers. The design of the proposed variable charges for FY 2017-18 and future years are presented in Table 17.

Table 17
Design of Uniform Volume Charge

Base Cost/Uniform Volume Charge	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Base Cost	$355,621	$385,745	$418,414	$453,892	$492,313
Units of Service (HCF)	139,350	139,981	140,612	141,242	141,873
Uniform Volume Charge ($/HCF)	$2.55	$2.76	$2.98	$3.21	$3.47
Units of Service (HCF) with Demand Response	138,217	138,144	138,100	138,029	138,645
Uniform Volume Charge	$2.58	$2.80	$3.03	$3.29	$3.56

Proposed Water Rates

Table 18 presents the proposed fixed charges and variable charges for the water system for the next five years. Table 18 includes the current fixed charges, fixed charges for January 2018 developed in the tables above, and the proposed fixed charges for implementation beginning on January 1, 2018 and each January 1 through FY 2021-22.

Table 18 also provides the proposed variable charges for the water system. The table includes the current variable charges by rate tier for an assumed 5/8 & 3/4-inch meter, the variable charge for the new rate structure for January 2018 developed in the Study, and the proposed variable charges for implementation beginning on January 1, 2018 and each January 1 through FY 2021-22.

Water Bill Impact Analysis

An impact analysis was performed to evaluate the change in single-family customer bills that would occur from the implementation of the proposed water rates for the January 2018 rate structure implementation. The impacts are provided in Table 19 below. For an average single-family customer with a 3/4-inch or smaller meter size using the average consumption of 7 hundred cubic feet (HCF) monthly, the bill will increase from $34.41 to $38.09, an increase of $3.68 or 10.7 percent. The 10.7 percent increase is higher than the overall 8 percent revenue increase required due to the water rate structure change from the current 3-Tier water rate structure to a uniform rate structure shown in Table 18.

Table 19 also provides impacts to SFR bills with a 5/8-inch meter or 3/4-inch meter for the January 1, 2019 rate increase. The impact to all water bills from this increase is about 8 percent. Future rate increases will have a similar 8 percent increase to water bills as the January 1, 2019 increase.

Table 18
Proposed Water Fixed and Variable Charges

	Current Rate	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
Meter Size	Fixed Charge ($ per month)					
5/8" and 3/4"	$20.41	$20.03	$21.64	$23.37	$25.24	$27.24
1"	$25.98	$27.27	$29.48	$31.84	$34.41	$37.14
1.5"	$33.40	$44.61	$48.23	$52.13	$56.33	$60.85
2"	$53.81	$66.78	$72.22	$78.07	$84.38	$91.16
3"	$204.11	$137.31	$148.55	$160.58	$173.61	$187.53
	Variable Charge ($ per HCF)					
Example Meter Size (5/8" or 3/4")						
Tier 1 - 0 to 2 units	$0.00					
Tier 2 - 2 to 21 units	$2.80					
Tier 3 - Over 21	$3.46					
All Consumption		$2.58	$2.80	$3.03	$3.29	$3.56

Table 19
Comparison of Current Single-family Residential Monthly Water Bill with 5/8-inch or 3/4-inch Meter Size with Proposed Monthly Bill Using January 2018 and January 2019 Water Rates

		Current Bill			January 1, 2018 Proposed Bill				
Description	Use (HCF)	Service Charge	Volume Charge	Current Bill	Service Charge	Volume Charge	Proposed Bill	Dollar Change	Percent Change
	0	$20.41	$0.00	$20.41	$20.03	$0.00	$20.03	($0.38)	-1.9%
Very Low	1	$20.41	$0.00	$20.41	$20.03	$2.58	$22.61	$2.20	10.8%
Low	2	$20.41	$0.00	$20.41	$20.03	$5.16	$25.19	$4.78	23.4%
Median	5	$20.41	$8.40	$28.81	$20.03	$12.90	$32.93	$4.12	14.3%
Average	7	$20.41	$14.00	$34.41	$20.03	$18.06	$38.09	$3.68	10.7%
High	10	$20.41	$22.40	$42.81	$20.03	$25.80	$45.83	$3.02	7.1%
Very High	15	$20.41	$36.40	$56.81	$20.03	$38.70	$58.73	$1.92	3.4%
	20	$20.41	$50.40	$70.81	$20.03	$51.60	$71.63	$0.82	1.2%

		January 1, 2018 Proposed Bill			January 1, 2019 Proposed Bill				
Description	Use (HCF)	Service Charge	Volume Charge	Proposed Bill	Service Charge	Volume Charge	Proposed Bill	Dollar Change	Percent Change
	0	$20.03	$0.00	$20.03	$21.64	$0.00	$21.64	$1.61	8.0%
Very Low	1	$20.03	$2.58	$22.61	$21.64	$2.80	$24.44	$1.83	8.1%
Low	2	$20.03	$5.16	$25.19	$21.64	$5.60	$27.24	$2.05	8.1%
Median	5	$20.03	$12.90	$32.93	$21.64	$14.00	$35.64	$2.71	8.2%
Average	7	$20.03	$18.06	$38.09	$21.64	$19.60	$41.24	$3.15	8.3%
High	10	$20.03	$25.80	$45.83	$21.64	$28.00	$49.64	$3.81	8.3%
Very High	15	$20.03	$38.70	$58.73	$21.64	$42.00	$63.64	$4.91	8.4%
	20	$20.03	$51.60	$71.63	$21.64	$56.00	$77.64	$6.01	8.4%

Water Rate Survey

A water rate survey was conducted for neighboring communities to the Heritage Ranch Community Services District. Chart 1 compares the District's single-family residential (SFR) estimated monthly water bill with those of neighboring communities at the same consumption of 7 HCF monthly. The rate survey includes rate schedules in effect March 2017. Water bills for the District are shown using the current rates and the proposed rates for implementation January 1, 2018. The chart indicates that with the January 2018 water rate structure change, a SFR customer using the average monthly consumption of 7 HCF will experience a bill that is in the lower half of the communities listed.

Chart 1
Single-family Residential Monthly Water Bills with 3/4-inch or Smaller Meter Using 7 HCF
For Rates in Effect March 2017

Note: Above table uses water rates in effect March 2017. District January 2018 bill is based on the rate structure and rates in Table 18.

Wastewater Financial Planning

Financial planning for the wastewater enterprise includes identifying and projecting revenues and revenue requirements of the wastewater system for a five-year planning period. Estimates of revenue from various sources are compared with the projected revenue requirements. This comparison allows the review of the adequacy of existing revenue to meet annual obligations and provide the basis for revenue adjustments. New wastewater rates and charges are created to recover the District's annual operating and capital costs associated with the wastewater system.

This section discusses the current wastewater rates, user classifications, revenues and revenue requirements, planned capital improvement expenditures and financing sources, and proposed revenue adjustments.

Current Wastewater Rates

The current wastewater rates consist of fixed charges to residential and non-residential customers. Residential and Commercial customers are charged the same fixed charge per month. Other customers are charged a multiple of the Residential fixed charge. For example, RV spaces are charged 0.8 times the Residential charge. The current rates are presented in Table 20.

Table 20

Schedule of Current Wastewater Service Rates

Effective July 1, 2016

Classification	Fixed Charges
	$/month
Residential	$26.09
RV Space	20.87
Commercial	26.09
Camp Restroom	55.36
Dump Station	220.34
Holiday Condo	$782.57

Wastewater User Classifications

Number of Customers

The District currently classifies wastewater customers as Residential, RV Space, Commercial, Camp Restroom, Dump Station, and Holiday Condo. Residential customers account for about 88 percent of the total customers served by the wastewater system. Growth is projected to occur only in Residential accounts at a rate of 0.50 percent annually following the assumptions listed in Table 1. Table 21 provides the historical and projected number of customers by classification.

Table 21
Projected Wastewater Customers by Classification

Customer Class	Actual FY 15-16	Projected FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Number of Accounts							
Residential/Condo [1]	1,481	1,488	1,495	1,502	1,510	1,518	1,526
RV Space	177	177	177	177	177	177	177
Commercial	15	15	15	15	15	15	15
Camp Restroom	1	1	1	1	1	1	1
Dump Station	1	1	1	1	1	1	1
Holiday Condo	0	0	0	0	0	0	0
Total Accounts	1,675	1,682	1,689	1,696	1,704	1,712	1,720

[1] Accounts are forecast to increase based on the assumed growth rate of 0.5% annually.

Wastewater Financial Plan

The financial plan provides the means of analyzing the revenue and revenue requirements of the wastewater system and its impact on reserves as well as the ability to fund on-going operation and maintenance expense and capital infrastructure requirements. This section of the Report discusses the projection of revenue, operation and maintenance expenses, capital improvement needs of the wastewater system and its financing, debt and debt service requirements, and revenue adjustments needed to maintain a sustainable wastewater enterprise.

Revenues

The District receives revenue from several sources. Operating revenue is received from rates and charges for wastewater service. Other revenue includes hook-up fees, turn-on fees, late fees, standby charges, property taxes, and interest income.

Table 22 presents the projected fixed charge revenue from current wastewater rates of the wastewater system. The revenue is projected by applying the current wastewater rates from Table 20 to the projected number of accounts.

Table 22
Projected Rate-based Wastewater Revenue Using Existing Rates

Description	Projected FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Wastewater Service Revenues						
Fixed Charges [1]	$518,196	$520,387	$522,579	$525,083	$527,588	$530,093
Total Revenues From Current Rates	$518,196	$520,387	$522,579	$525,083	$527,588	$530,093

[1] FY 16-17 and forecast years' revenue calculated by multiplying current wastewater service rate by the number of customers.

Revenue Requirements

Revenue requirements of the wastewater system include operation and maintenance expense, annual replacement transfer, proposed SRF loan debt service payments, and SRF loan reserve payment. Each of these items are discussed below.

Operation and Maintenance Expense

Operation and maintenance expenses (O&M) are an on-going obligation of the wastewater system and such costs are normally met from wastewater service revenue. O&M includes the cost to operate and maintain the wastewater collection system, lift stations, and treatment and disposal facilities. Costs also include technical services and other general and administrative expenses.

O&M has been projected recognizing the major expense categories of personnel services, electric power expense, chemicals expense, and other expenses. Personnel costs consist of salaries and benefits expense of those personnel directly involved with providing wastewater service. Future personnel costs are projected to increase by 3 percent annually beginning in FY 2017-18. Electric power and chemicals expense are projected to increase annually at 2 percent. All other O&M expense is projected to increase by 2 percent annually. Table 23 provides a summary of the wastewater O&M expenses for the Study period.

Table 23
Projected Wastewater Operation and Maintenance Expenses

	Budget	Projected				
Description	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Salaries & Benefits	$223,000	$229,690	$236,581	$243,678	$250,989	$258,520
Maintenance and Supply						
Electricity	$60,000	$61,200	$62,424	$63,672	$64,945	$66,244
Chemicals	10,000	10,200	10,404	10,612	10,824	11,040
Other O&M	54,500	55,590	56,703	57,836	58,992	60,171
Subtotal	$124,500	$126,990	$129,531	$132,120	$134,761	$137,455
General & Administration						
General Fund Allocation	$185,660	$189,373	$193,160	$197,023	$200,963	$204,982
Insurance	6,500	6,630	6,763	6,898	7,036	7,177
Other O&M	34,300	34,986	35,685	36,400	37,127	37,869
Subtotal	$226,460	$230,989	$235,608	$240,321	$245,126	$250,028
Total O&M Expense	$573,960	$587,669	$601,720	$616,119	$630,876	$646,003

Annual Replacement Transfer

The District plans for replacements in the wastewater system that occur from time to time during the fiscal year. An annual amount is transferred from the operating fund to aid in funding these replacements. The annual amount is targeted to approximately equal depreciation expense which increases over time as fixed assets are booked by the District. The replacement transfer gradually increases to this target level over a ten-year period.

Proposed SRF Loan Debt Service

The District currently does not have any outstanding wastewater debt. However, it is proposed that partial funding of the headworks project in the wastewater Capital Improvement Program (CIP) be funded with a State Revolving Fund (SRF) loan administered by the State Water Resources Control Board in an amount $500,000. It

is assumed that the SRF loan will have annual debt service of about $34,400 based on an interest rate of 2 percent and a 20-year term.

SRF Loan Reserve Payment

As part of an agreement for the SRF loan, the District would be required to build a loan reserve over a 10-year period equal to 1/10th of the annual sum of the SFR loan payments. This payment is estimated at $3,400 annually.

Wastewater Capital Improvement Program

The District has developed a capital improvement program (CIP) that lists capital expenditures for FY 2016-17 through FY 2021-22, presented in Table 24. Major projects include the Headworks Project (headworks screening, meter, road work, liner, pond 2 baffles), Sludge Removal, and lift station rehabilitations.

Table 24
Wastewater Capital Improvement Program With Sources and Uses of Funds

	Budget	Projected				
Description	FY 16-17	FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Current Capital Improvement Projects (CIP) [1]						
Structures/Improvements	$92,000	$0	$0	$0	$0	$0
Equipment	35,000	-	-	-	-	-
Sludge Removal	-	-	-	8,200	292,600	-
Headworks screen, influent meter, pond 2 baffels	-	-	-	27,300	50,600	1,363,300
Lift Station #5	-	-	-	8,200	28,100	-
Brush Aeration Pond #2	-	-	-	-	-	-
Lift Station #3 Rehabilitation	-	-	-	63,400	84,400	-
Total Water CIP	**$127,000**	**$0**	**$0**	**$107,100**	**$455,700**	**$1,363,300**
Sources and Uses of Capital Funds						
Beginning Year Balance [2]	$1,013,200	$986,102	$1,074,520	$1,187,168	$1,219,647	$921,947
Replacement Transfer from Operations	99,902	88,419	112,648	139,578	158,000	173,012
New Bond Proceeds (net of issuance costs)	-	-	-	-	-	500,000
Capital Improvement Projects (CIP)	(127,000)	-	-	(107,100)	(455,700)	(1,363,300)
Ending Balance	**$986,102**	**$1,074,520**	**$1,187,168**	**$1,219,647**	**$921,947**	**$231,659**

[1] CIP Source: FY 16-17 District CIP document.
[2] The available cash balance includes Capital Replacement and Capital Facility Fund reserves. Information for FY 16-17 from Budget.

The CIP is funded through use of capital reserves, annual replacement transfer, and net loan proceeds as shown near the bottom of Table 24.

Wastewater Financial Plan

A financial plan has been prepared for the wastewater utility that includes the revenues and revenue requirements that were identified for the wastewater system and is presented in Table 25. The plan incorporates specific financial planning criteria to provide guidance to maintain the health of the wastewater utility on an on-going basis. The criteria included the following.

- Generate positive levels of income in each year of the Study period
- Maintain the operating and capital reserves at or greater than target levels
- Maintain debt service coverage ratios at or greater than the minimum required
- Meet annual capital replacement spending from the annual replacement transfer and capital reserves

Proposed Revenue Adjustments

Analysis of the revenues and revenue requirements of the wastewater financial plan indicate that revenue increases are necessary. Revenue increases of 6.5 percent annually beginning January 1, 2018 are required to meet the financial planning criteria discussed above. Table 25 provides the wastewater financial plan with the proposed revenue increases.

Table 25
Wastewater Financial Plan

	Projected				
Description	**FY 17-18**	**FY 18-19**	**FY 19-20**	**FY 20-21**	**FY 21-22**
Proposed Revenue Increase (January 1)	**6.5%**	**6.5%**	**6.5%**	**6.5%**	**6.5%**
Sources of Funds					
Rate-based Revenues, Existing Rates [1]	$520,387	$522,579	$525,083	$527,588	$530,093
Total Additional Water Sales Revenue [2]	16,913	52,055	89,835	130,424	174,017
Miscellaneous Income	143,900	144,800	145,800	146,700	147,700
Interest Income	1,888	1,934	1,979	2,060	2,109
Total Sources of Funds	$683,088	$721,368	$762,697	$806,772	$853,919
Uses of Funds					
O&M and Capital Outlay	$587,669	$601,720	$616,119	$630,876	$646,003
Replacement Transfer	88,419	112,648	139,578	158,000	173,012
SRF Loan Reserve Fund Payment	0	0	0	0	3,400
New Bond Debt Service	0	0	0	0	34,400
Total Uses of Funds	$676,088	$714,368	$755,697	$788,876	$856,815
Net Funds Available	**$7,000**	**$7,000**	**$7,000**	**$17,896**	**($2,896)**
Available Reserves					
Beginning available reserves [2]	$287,000	$294,000	$301,000	$308,000	$325,896
Additions (reductions)	7,000	7,000	7,000	17,896	(2,896)
Ending available reserves	**$294,000**	**$301,000**	**$308,000**	**$325,896**	**$323,000**
Target Reserves [3]	$294,000	$301,000	$308,000	$315,000	$323,000
Above (below) Target	$0	$0	$0	$10,896	$0
Debt Service Coverage					
Net Revenues	$95,419	$119,648	$146,578	$175,896	$207,916
Annual Debt Service	$0	$0	$0	$0	$34,400
Coverage	0%	0%	0%	0%	604%

[1] Projected using the existing rates.
[2] The available FY 16-17 cash balance provided by the District.
[3] Target reserve estimated at 180 days of operation and maintenance expense.

Cost of Service

This section of the report discusses how the wastewater system's operating and capital costs are allocated for use in designing rates. Establishing rates in California requires that the agency responsible for imposing property-related fees create a nexus between the cost of providing service and the rates to be imposed.

Industry Methodology

Methodology from the Water Environment Federation (WEF) is commonly used to allocate wastewater costs in an appropriate manner. Similar to AWWA, WEF is an industry trade organization that provides guidance on operations, technical training, education, and management of wastewater utilities. General principles are provided to assist agencies with the design of wastewater rates and charges that are consistent with local requirements while also recognizing state laws and legal framework.

Due to the District's current wastewater system operations, the method used in this Study to allocate costs and to design wastewater rates is an Equivalent Dwelling Unit (EDU) methodology. One EDU is defined as the wastewater impact on the wastewater system by a Residential customer.

All other customers are charged in relation to the Residential customer by assigning an EDU ratio to each customer classification. For example, an RV space has 0.8 times the impact to the wastewater system of a Residential customer and therefore is charged 0.8 times that of the Residential charge. Other non-residential customers are charged similarly however with different multiples. This methodology provides the basis to design rates to generate adequate revenue to meet estimated annual revenue requirements from the financial plan.

Wastewater Rate Design

The goal of the design of rates is to achieve fairness while ensuring that each customer class pays its fair share of costs. Rates should be simple to administer, easy to understand, and comply with regulatory requirements. This section describes how wastewater rates and charges are designed and includes the proposed schedule of wastewater rates for implementation.

Proposed Wastewater Rates

The proposed wastewater charges are calculated by first developing the number of EDU's served by the District. This is determined by applying an EDU ratio to the number of customers of each customer classification, then summing the result to determine the number of EDUs served by the wastewater system. Then the annual revenue requirement derived from the financial plan is divided by the number of EDU's to calculate a monthly charge per EDU. Table 26 provides the calculations that determine the monthly charge per EDU.

Residential customers have a EDU ratio of 1.0 and are charged the monthly charge per EDU calculated in Table 26. Applying the EDU ratio of the other customer classifications to the monthly EDU charge, the proposed fixed charges for wastewater service are determined as shown in Table 27. The table provides the EDU ratio used, the current wastewater charges, and the proposed wastewater charges for the Study period.

Table 26
Calculation of the Number of EDUs and Monthly Charge per EDU

Description		FY 17-18	FY 18-19	FY 19-20	FY 20-21	FY 21-22
Number of Customers/Units						
Residential/Condo		1,495	1,502	1,510	1,518	1,526
RV Space		177	177	177	177	177
Commercial		15	15	15	15	15
Camp Restroom		1	1	1	1	1
Dump Station		1	1	1	1	1
Total Number of Customers		1,689	1,696	1,704	1,712	1,720
Number of EDUs	EDU Ratio					
Residential/Condo	1.0	1,495.00	1,502.00	1,510.00	1,518.00	1,526.00
RV Space	0.8	141.59	141.59	141.59	141.59	141.59
Commercial	1.0	15.00	15.00	15.00	15.00	15.00
Camp Restroom	2.1	2.12	2.12	2.12	2.12	2.12
Dump Station	8.45	8.45	8.45	8.45	8.45	8.45
Total Number of EDUs		1,662.15	1,669.15	1,677.15	1,685.15	1,693.15
Revenue Requirement		$554,212	$592,722	$634,274	$678,724	$726,273
Monthly Charge per EDU		**$27.79**	**$29.59**	**$31.52**	**$33.56**	**$35.75**

Table ES-3
Proposed Wastewater Monthly Fixed Charges

Description	EDU Ratio	Current Charge	January 1, 2018	January 1, 2019	January 1, 2020	January 1, 2021	January 1, 2022
Residential/Condo	1.0	$26.09	$27.79	$29.59	$31.52	$33.56	$35.75
RV Space	0.8	$20.87	$22.23	$23.67	$25.21	$26.85	$28.60
Commercial	1.0	$26.09	$27.79	$29.59	$31.52	$33.56	$35.75
Camp Restroom	2.1	$55.36	$58.97	$62.79	$66.88	$71.21	$75.86
Dump Station	8.45	$220.34	$234.70	$249.90	$266.20	$283.43	$301.92
Holiday Condo		$782.57	$833.70	$887.70	$945.60	$1,006.80	$1,072.50

Wastewater Bill Impacts

Since the Residential wastewater charge is a fixed charge per month, the impact to wastewater bills can be determined from inspection of Table 27. For a SFR customer, the monthly wastewater bill will increase from $26.09 to $27.79, an increase of $1.70 or 6.5 percent. Monthly wastewater bills for other customer classifications increase by 6.5 percent annually as well.

Wastewater Rate Survey

A wastewater rate survey was conducted for neighboring communities to the District. Chart 2 compares the District's current and proposed SFR monthly wastewater bill with those of neighboring communities. The chart indicates that with the proposed charges, a SFR customer will experience a bill that is in the lower half of the communities surveyed.

Chart 2
Single-family Residential Monthly Wastewater Bills
For Rates in Effect March 2017

Note: Above table uses wastewater rates in effect March 2017. District January 2018 bill is based on the rate structure and rates in Table 26.

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