RESOLUTION NO. 2018–21
RESOLUTION NO. PFA-03
ORDINANCE NO. 2018–01

AGENDA

MISSION STATEMENT

"Our team is dedicated to protecting, enhancing, and developing our rich water resources to the highest beneficial use for Calaveras County, while maintaining cost-conscious, reliable service, and our quality of life, through responsible management."

Regular Board Meeting
Wednesday, May 23, 2018
1:00 p.m.

Calaveras County Water District
120 Toma Court, (PO Box 846)
San Andreas, California 95249

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Administration Office at 209-754-3028. Notification in advance of the meeting will enable CCWD to make reasonable arrangements to ensure accessibility to this meeting. Any documents that are made available to the Board before or at the meeting, not privileged or otherwise protected from disclosure, and related to agenda items, will be made available at CCWD for review by the public.

ORDER OF BUSINESS

CALL TO ORDER / PLEDGE OF ALLEGIANCE

1. ROLL CALL

2. PUBLIC COMMENT

At this time, members of the public may address the Board on any non-agendized item. The public is encouraged to work through staff to place items on the agenda for Board consideration. No action can be taken on matters not listed on the agenda. Comments are limited to three minutes per person.

3. PUBLIC HEARING

PROPOSED WATER AND WASTEWATER RATE ADJUSTMENTS

- Presentations
- Open Public Hearing
- Receive Public Comments / Questions
- Close Public Hearing
- Board of Directors Discussion / Action Regarding Adoption of Proposed Water and Wastewater Rates **ORD 2018-__**

4. **NEXT BOARD MEETINGS**

- Wednesday, June 13, 2018, 1:00 p.m., Regular Board Meeting
- Tuesday, June 19, 2018, 1:00 p.m., Budget Workshop
- Wednesday, June 27, 2018, 1:00 p.m., Regular Board Meeting / Budget Adoption

5. ADJOURNMENT

CALAVERAS COUNTY WATER DISTRICT

Board of Directors

District 1	Scott Ratterman
District 2	Terry Strange
District 3	Bertha Underhill
District 4	Russ Thomas
District 5	Jeff Davidson

Legal Counsel

Matthew Weber, Esq.
Downey Brand, LLP

Financial Services

Umpqua Bank
US Bank
Wells Fargo Bank

Auditor

Richardson & Company, LLP

CCWD Committees	Membership**
*Engineering Committee	Davidson / Thomas (alt. Underhill)
*Finance Committee	Underhill / Ratterman (alt. Thomas)
*Legal Affairs Committee	Ratterman / Davidson (alt. Underhill)
Executive Committee *(ad hoc)*	Ratterman / Thomas
Cost of Service Study Committee *(ad hoc)*	Strange / Ratterman
Wild and Scenic Committee *(ad hoc)*	Strange / Ratterman

Joint Power Authorities

ACWA / JPIA	Ratterman (alt. Dave Eggerton)
CCWD Public Financing Authority	All Board Members
Calaveras-Amador Mokelumne River Authority (CAMRA)	Ratterman / Underhill (alt. Strange)
Calaveras Public Power Agency (CPPA)	Peter Martin (alt. Dave Eggerton)
Eastern San Joaquin Groundwater Authority	Russ Thomas
Tuolumne-Stanislaus Integrated Regional Water Management Joint Powers Authority (T-Stan JPA)	Strange (alt. Thomas)
Upper Mokelumne River Watershed Authority (UMRWA)	Davidson (alt. Ratterman)

Other Regional Organizations of Note

Calaveras LAFCO	Ratterman / Strange
Calaveras County Parks and Recreation Committee	Thomas (alt. Underhill)
Highway 4 Corridor Working Group	Thomas / Underhill
Mountain Counties Water Resources Association (MCWRA)	All Board Members
Mokelumne River Association (MRA)	All Board Members
Tuolumne-Stanislaus Integrated Regional Water Mgt. JPA Watershed Advisory Committee (WAC)	Peter Martin (alt. Metzger)

* Standing committees, meetings of which require agendas & public notice 72 hours in advance of meeting.
** The 1st name listed is the committee chairperson.

Agenda Item

DATE: May 23, 2018

TO: Dave Eggerton, General Manager

FROM: Jeffrey Meyer, Director of Administrative Services

SUBJECT: Public Hearing – Proposed Water and Wastewater Rate Adjustments

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RECOMMENDED ACTION:

Motion _____/_____ adopting Ordinance 2018-01 approving the District's proposed Water and Wastewater Rate Plan.

SUMMARY:

As a Special District governed by the laws of the State of California, the Calaveras County Water District ("District") must recover funds necessary to support its operations and infrastructure. Per policy, the District must review its water and wastewater rates for adequacy and propose adjustments if required. Since April 2017 the District has held fifteen publicly noticed Finance Committee and Board Meetings to address the funding requirements for the District's water and wastewater services.

HDR Engineering, Inc. completed rate studies for both water and wastewater operations (attached) and calculated the revenue requirements for each system, revenue requirements that provide sufficient funding for the District's operations and maintenance, debt service, capital improvement programs, and meet the District's financial reserves requirements. The rate study also included a cost of service analysis and a rate design analysis for both water and wastewater systems.

The rate studies identified funding deficiencies in the District's water and wastewater operations. The Board of Directors reviewed the requirements and various rate design proposals, provided feedback, and at the March 28, 2018 Board meeting recommended the preferred five-year water and wastewater rate model, effective July 16, 2018.

HDR Engineering, Inc. also prepared a water shortage rate analysis. Water shortage rates are one of several "tools" that can assist the District during a drought or water emergency. The District can use the water shortage rates in tandem with other conservation programs and can be one mechanism or tool used to maintain sufficient revenues during water shortage events. The proposed water shortage rates are included in the five-year water rate plan, and if approved by the Board during a water emergency or drought, can be added to the existing water base and tiered rates.

Also included in the proposed water rate plan is an increase for Calaveras agricultural raw water users. The proposed increase in agricultural water rates will commence January 1, 2019.

The Board of Directors directed staff to prepare and mail a notice of the proposed water and wastewater rate increases and schedule a Public Hearing on Wednesday, May 23, 2018 at 1:00 p.m. at 120 Toma Court, San Andreas, CA. The Public Hearing can be held not less than 45 days after the mailing of the notice. The notices were mailed April 5, 2018, more than 45 days prior to the scheduled hearing on May 23, 2018.

Article XIIID, Section 6 of the California State Constitution governs the procedures for increasing fees and charges for property related services, such as water and wastewater services. According the Section 6, the District shall provide written notice by mail to the affected property owners and shall hold a Public Hearing. At the Public Hearing the District shall consider all written protests against the proposed increases. If written protests against the proposed increases are presented by a majority of the property owners served by Calaveras County Water District's water and/or wastewater services, the District shall not impose the increase.

As of May 17, 2018, the District received 276 written protests to the proposed water rate increases and 204 written protests to the proposed wastewater rate increases. The District has 13,080 water customers and 4,848 wastewater customers. At this time there is not a majority protest and the Board can consider the proposed rate increase.

RECOMMENDATION:

The Board is requested to adopt Ordinance 2018-01 approving the District's proposed five-year water and wastewater rate plan, commencing July 16, 2018, and the proposed five-year agricultural water rate plan, which will commence January 1, 2019.

FINANCIAL CONSIDERATIONS:

Water and wastewater rates are used to fund the District's operations and maintenance, debt service, capital outlay and must also be sufficient to meet the District's financial reserves requirements. The proposed water and wastewater rate increase will meet those obligations as well as maintain funding for the District's Capital Renovation and Replacement ("Capital R&R") program.

Attachment: *Ordinance 2018-01, Ordinance of Calaveras County Water District Modifying Rates for Water and Wastewater Services*
- *Draft Final Calaveras County Water District Water Rate Study*
- *Draft Final Calaveras County Water District Sewer Rate Study*

ORDINANCE NO. 2018-01

AN ORDINANCE OF CALAVERAS COUNTY WATER DISTRICT MODIFYING RATES FOR WATER AND WASTEWATER SERVICES

WHEREAS, the Board of Directors of the Calaveras County Water District (District) has responsibility for establishing rates for the provision of District services and corresponding implementation policies; and

WHEREAS, the District has prepared financial and policy information in respect to the provision of water and wastewater services over the next five years for review by the Board of Directors and the public, and caused to be prepared *Water and Sewer Rate Studies* dated April 2018 that recommended adjustments to water and wastewater rate schedules; and

WHEREAS, the Board of Directors held fifteen public meetings starting in April 2017 on the need to increase water and wastewater rates, including Board of Director meetings on July 26, August 9, September 27, and December 13, 2017; and February 14, February 28, March 14 and March 28, 2018, and held seven town hall meetings and other public outreach meetings in communities throughout the District between April 3 and May 18, 2018 regarding Water and Wastewater financial and rate issues; and

WHEREAS, the Board of Directors has received considerable community input during the public meetings and town hall community meetings and has considered this input in formulating the proposed rates; and

WHEREAS, the District has, in accordance with Article XIIID, Section 6 of the California State Constitution, provided written notices containing detailed descriptions of proposed water and wastewater rate changes for property owners who receive water and/or wastewater services from the District; and

WHEREAS, the Notice of Proposed Water and Wastewater Rate Increase, mailed April 5, 2018, included notification of a Public Hearing on May 23, 2018 to consider rate increases, said date having been established by Board action at its meeting on March 28, 2018; and

WHEREAS, the officially noticed Public Hearing was held Wednesday, May 23, 2018, and all members of the public present were given an opportunity to comment on the proposed Ordinance; and

WHEREAS, written protests received in accordance with the procedures outlined in Article XIIID, Section 6 numbered less than half of the property owners served; and

WHEREAS, the Board of Directors finds that it is now necessary to modify existing rates relative to the provision of water and wastewater services.

NOW, THEREFORE, BE IT ORDAINED by the Board of Directors of the Calaveras County

Water District as follows:

Section 1. Purpose. The purpose of this Ordinance is to increase water and wastewater rates as necessitated by the cost of providing and maintaining water and wastewater services, including, but not limited to, operations and maintenance, debt service, the capital improvement program, and meeting financial reserve requirements.

Section 2. Findings. The Board of Directors finds and determines as follows:

- The water and wastewater service rates implemented by this ordinance, in conjunction with other estimated revenue sources, have been fixed in an amount sufficient to pay the operating and maintenance expenses of the District's water and wastewater systems, pay the principal and interest on existing debt, provide sufficient revenues for reserve requirements, and continue funding the District's Capital Renovation and Replacement ("Capital R&R") program.

- The increased water and wastewater rates are reasonably related to, and do not exceed, the District's cost of providing water and wastewater services.

- The revenues derived from the water rates do not exceed the funds required to provide water service and are not used for any other purpose than in the provision of water services.

- The revenues derived from the wastewater rates do not exceed the funds required to provide wastewater services and are not used for any other purpose than in the provision of wastewater services.

- The amount of the water and wastewater rates imposed on each water and wastewater service customer does not exceed the proportional cost of the water and/or wastewater service actually delivered or made available to every identified parcel of real property and/or customer within the District's service boundary.

- Every property subject to the rates established by this Ordinance actually uses the underlying service or the service is immediately available for that property's use.

- The District has, in accordance with Article XIIID of the California State Constitution, provided written notices containing detailed descriptions of proposed water and wastewater rate changes to District property owners who receive service from the District and written protests presented to the District for the proposed rates did not exceed fifty percent (50%) of the property owners.

- The District conducted a duly noticed Public Hearing on May 23, 2018 concerning the proposed rate increases at which time the public had the opportunity to speak to the Board of Directors regarding the proposed increases and the Board of Directors considered the testimony received prior to making a final decision to implement the rate increases.

Section 3. Water and Wastewater Rate Schedule. The water and wastewater rates are established in accordance with the provisions of EXHIBIT 1 attached hereto and incorporated herein. The rates shown replace monthly water and wastewater charges established and adjusted by previous actions of the Board of Directors.

Section 4. **Effect on Existing Policies.** Any provision of any ordinance, resolution, fee, charge and/or other policy of the District in conflict with this Ordinance 2018-01 is hereby modified to the extent, and only to the extent, necessary to conform with the requirements provided herein. If any existing fees, charges and/or regulations in effect on the date of adoption of this ordinance are not in conflict herewith, said existing fees, charges and/or regulations shall remain in effect without modification.

Section 5. Effective Date. Consistent with Water Code Section 31105, this Ordinance shall become effective July 16, 2018.

Section 6. Rates.

The District's water and wastewater rates will be implemented as set forth in this Section.

1.1) **Bi-Monthly Water Rates** – **EXHIBIT 1, Schedule A** attached hereto shall be the basis for minimum water charges to customers receiving service.

1.1.1) **Base Rates – EXHIBIT 1, Table 1** of **Schedule A** represents the bi-monthly water base rates charged for the sale of potable water through various meter sizes within the District service area.

1.1.1.1) **Effective Date** - The bi-monthly water base rates shown in **EXHIBIT 1**, **Table 1** of **Schedule A** shall become effective July 16 of each year as shown. The first base rate increase shall occur on July 16, 2018.

1.1.2) **Consumptive Rates – EXHIBIT 1**, **Table 2** of **Schedule A** represents the bi-monthly tiered consumptive rates in cubic feet **(cf)** applied to the average Residential meters, and the consumptive rates in cubic feet **(cf)** applied to the average Non-Residential and Irrigation/Landscape/Other meters. The usage charge is shown in dollars per hundred cubic feet **($/100 cf)**.

1.1.2.1) **Effective Date** - The bi-monthly tiered rates shown in **EXHIBIT 1**, **Table 2** of **Schedule A** shall become effective July 16 of each year as shown. The first tiered rate increase shall occur on July 16, 2018.

1.1.3) **Water Shortage Rates – EXHIBIT 1**, **Table 3** of **Schedule A** represents the tiered consumptive rates applied to average bi-monthly water usage in cubic feet **(cf)** for Residential, Non-Residential and Irrigation/Landscape/Other meters. The usage charge is shown in dollars per hundred cubic feet **($/100 cf)**.

1.1.3.1) **Effective Date** - The bi-monthly water shortage rates shown in **EXHIBIT 1**, **Table 3** of **Schedule A** shall become effective July 16 of each year as shown. The first tiered rate increase shall occur on July 16, 2018.

1.2.1) **Bi-Monthly Residential Wastewater Rates** – **EXHIBIT 1**, **Table 1** of **Schedule B** attached hereto represents the bi-monthly wastewater flat rate charged for residential sanitary sewer service within the District service area.

1.2.1.1) **Table 1** in **EXHIBIT 1**, **Schedule B** represents the charge for a standard single family residential connection (also referred to in Board policy documents as a single family dwelling equivalent ("SFDE") or equivalent single-family unit ("ESFU").

1.2.1.2) **Effective Date** - The residential bi-monthly wastewater rates shown in **EXHIBIT 1**, **Table 1** of **Schedule B** shall become effective July 16 of each year shown. The first rate increase shall occur on July 16, 2018.

1.2.2) **Bi-Monthly Non-Residential Wastewater Rates** – **EXHIBIT 1**, **Table 2** of **Schedule B** attached hereto represents the bi-monthly wastewater flat rate charged for non-residential sanitary sewer service within the District service area.

1.2.2.1) **Table 2** in **EXHIBIT 1**, **Schedule B** represents the charge for a standard single family residential connection (also referred to in Board policy documents as a single family dwelling equivalent ("SFDE") or equivalent single-family unit ("ESFU").

1.2.2.2) **Effective Date** - The non-residential bi-monthly wastewater rates shown in **EXHIBIT 1**, **Table 2** of **Schedule B** shall become effective July 16 of each year shown. The first rate increase shall occur on July 16, 2018.

1.3) **Agricultural Water Rates** – **EXHIBIT 1, Schedule C** attached hereto shall be the basis for minimum raw water charges to agricultural customers receiving service.

1.3.1) **Agricultural Water Rates – EXHIBIT 1, Table 1** of **Schedule C** represents the per acre foot rate charged for the sale of raw water to Calaveras agricultural users.

1.3.2.1) **Effective Date** - The agricultural raw water rates shown in **EXHIBIT 1**, **Table 1** of **Schedule C** shall become effective January 1 of each year as shown. The first rate increase shall occur on January 1, 2019.

1.4) **Future Rate Adjustments** - Within six months of July 16, 2023, the District will undertake a water and wastewater rate review.

/
/
/

PASSED AND ADOPTED this 23rd day of May 2018, after a noticed Public Hearing by the following vote:

AYES:
NOES:
ABSTAIN:
ABSENT:

CALAVERAS COUNTY WATER DISTRICT

_____
Scott Ratterman, President
Board of Directors

ATTEST:

_____
Rebecca Hitchcock, Clerk to the Board

EXHIBIT 1

Schedule A
Bi-Monthly Water Rate Charges

The bi-monthly water base rates by meter size shall be effective as indicated in Table 1. The base rate charge does not include any water or consumption use.

Table 1

Bi-Monthly Water Base Rate Charges by Meter Size

Meter Size	Bi-Monthly Base Rate Charge				
	Jul 16, 2018	Jul 16, 2019	Jul 16, 2020	Jul 16, 2021	Jul 16, 2022
5/8"	$112.28	$114.23	$116.22	$118.26	$120.35
3/4"	$168.43	$171.34	$174.33	$177.39	$180.53
1"	$280.71	$285.57	$290.55	$295.65	$300.89
1.5"	$561.43	$571.14	$581.10	$591.31	$601.77
2"	$898.28	$913.83	$929.76	$946.09	$962.83
3"	$1,796.57	$1,827.66	$1,859.52	$1,892.19	$1,925.66
4"	$2,807.14	$2,855.71	$2,905.50	$2,956.54	$3,008.85
6"	$5,614.00	$5,711.50	$5,811.00	$5,913.00	$6,017.50
8"	$8,982.40	$9,138.40	$9,297.60	$9,460.80	$9,628.00

In addition to the above bi-monthly base rate charges, the bi-monthly water usage rate charges indicated in Table 2 shall apply for each 100 cubic feet (cf) of water used, based on customer type.

Table 2

Bi-Monthly Water Tiered and Consumption Rate Charges ($/100 cf)

Bi-Monthly Tiered Rates per 100 cf - Residential					
Water Use (cf)	Jul 16, 2018	Jul 16, 2019	Jul 16, 2020	Jul 16, 2021	Jul 16, 2022
0 - 1,000	$1.09	$1.11	$1.13	$1.15	$1.17
1,001 - 6,000	$1.14	$1.16	$1.18	$1.20	$1.22
6,001 - 12,000	$1.56	$1.59	$1.62	$1.65	$1.68
Over 12,000	$1.77	$1.80	$1.83	$1.86	$1.90

Bi-Monthly Water Consumption Rates per 100 cf - Non-Residential					
Water Use (cf)	Jul 16, 2018	Jul 16, 2019	Jul 16, 2020	Jul 16, 2021	Jul 16, 2022
0 - 1,000	$1.47	$1.49	$1.52	$1.55	$1.57
1,001 - 6,000					
6,001 - 12,000					
Over 12,000					

Bi-Monthly Water Consumption Rates per 100 cf - Irrigation/Landscape/Other					
Water Use (cf)	Jul 16, 2018	Jul 16, 2019	Jul 16, 2020	Jul 16, 2021	Jul 16, 2022
0 - 1,000	$1.78	$1.81	$1.84	$1.87	$1.91
1,001 - 6,000					
6,001 - 12,000					
Over 12,000					

Table 3

Bi-Monthly Water Shortage Rate Charges ($/100 cf)

Only if implemented by the Calaveras County Water District Board of Directors, the bi-monthly water shortage rate charges will be in addition to the water base rate charges indicated in Table 1 and the water usage rate charges indicated in Table 2, and shall apply for each 100 cubic feet of water used.

Bi-Monthly Water Shortage Rate Charges per 100 cf - All					
Stage / Target	Jul 16, 2018	Jul 16, 2019	Jul 16, 2020	Jul 16, 2021	Jul 16, 2022
1 - 10%	$0.15	$0.15	$0.16	$0.16	$0.17
2 - 13%	$0.20	$0.21	$0.22	$0.23	$0.24
3 - 21%	$0.35	$0.36	$0.37	$0.38	$0.39
4 - 38%	$0.80	$0.82	$0.84	$0.86	$0.88
5 - 50%	$1.29	$1.32	$1.35	$1.38	$1.41

Schedule B
Bi-Monthly Wastewater Rate Charges

The following bi-monthly residential and non-residential wastewater rates represents the charge for a standard single family residential connection (also referred to in Board policy documents as a single family dwelling equivalent ("SFDE") or equivalent single family unit ("ESFU"), and shall be effective as indicated below:

Table 1

Bi-Monthly Residential Wastewater Rate Charges				
July 16, 2018	**July 16, 2019**	**July 16, 2020**	**July 16, 2021**	**July 16, 2022**
$179.91	$187.23	$194.78	$202.78	$210.63

Table 2

Bi-Monthly Non-Residential Wastewater Rate Charges				
July 16, 2018	**July 16, 2019**	**July 16, 2020**	**July 16, 2021**	**July 16, 2022**
$176.25	$183.38	$190.74	$198.33	$206.18

Schedule C

The following Calaveras agricultural raw water rates, per acre foot, shall be effective as indicated below:

Table 1

Agricultural Water Rates - Per Acre Foot				
Jan 1, 2019	Jan 1, 2020	Jan 1, 2021	Jan 1, 2022	Jan 1, 2023
$12.00	$15.00	$18.00	$18.00	$18.00

DRAFT FINAL REPORT

Calaveras County Water District

Water Rate Study

April 2018

April 15, 2018

Mr. Jeffrey Meyer
Director of Administrative Services
Calaveras County Water District
120 Toma Court
P.O. Box 846
San Andreas, California 95249

Subject: Comprehensive Water Rate Study Report

Dear Mr. Meyer:

HDR Engineering, Inc. (HDR) is pleased to present to the Calaveras County Water District (District) the final report for the comprehensive water rate study. The District's comprehensive water rate study was developed to provide cost-based and equitable rates to adequately fund the operating and capital needs of the water utility. This report outlines the overall approach used to achieve these objectives, along with our findings, conclusions and recommendations.

The Calaveras County Water District operates a water supply, transmission, and distribution system. The costs associated with developing the water supply, treat the water, and the costs of distributing water to customers has been developed based on District provided adopted budgets and included within the development of the proposed water rates.

This study was developed utilizing industry standard water rate setting principles and methodologies as outlined in the American Water Works Association M1 Manual "Principals of Water Rates, Fees, and Charges". This report provides the basis for developing and implementing water rates which are cost-based, equitable, and defensible to the District's customers.

We appreciate the assistance provided by the District's management team in the development of this study. More importantly, HDR appreciates the opportunity to provide these technical and professional services to the District.

Sincerely yours,

HDR Engineering, Inc.

Shawn Koorn

Associate Vice President

hdrinc.com

929 108th Ave NE, Suite 1300, Bellevue, WA 98004
T 425-450-6200

Table of Contents

Executive Summary

Introduction

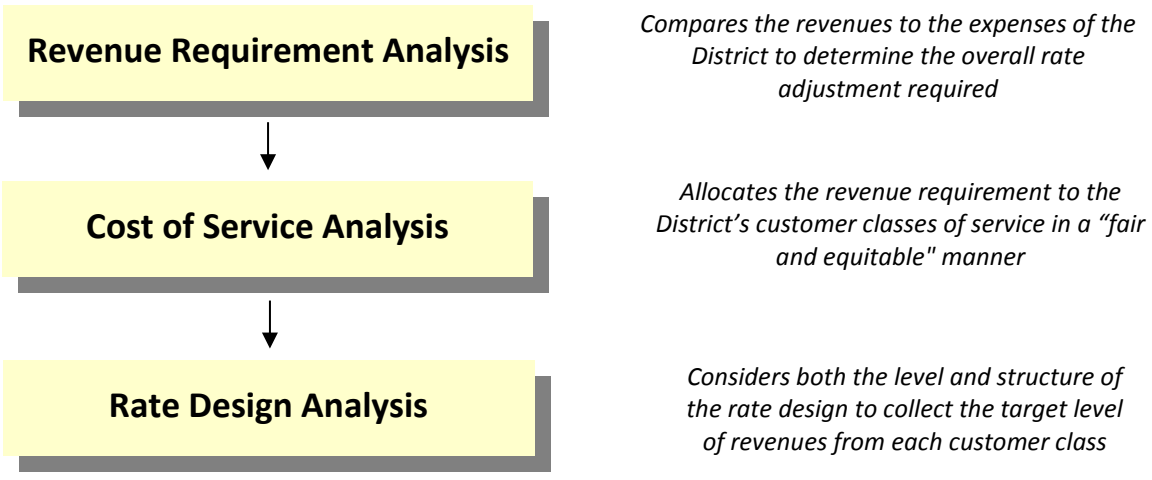
HDR was retained by the Calaveras County Water District (District) to conduct a comprehensive water rate study. The objective of the rate study was to review the District's operating and capital costs in order to develop a financial plan and develop cost-based and equitable rates for the District's water system customers. This study determined the adequacy of the existing water rates and provides the framework and cost basis for the proposed level of revenues and recommended water rates.

The District operates a water transmission and distribution system as well as production and treatment facilities for surface and ground water sources. The costs associated with providing water supply, treatment, and distributing water to customers of the District's water system has been developed based on the District adopted budget information and included within the development of the proposed rates.

Overview of the Rate Study Process

A comprehensive water rate study uses three interrelated analyses to address the adequacy and equity of a utility's rates. This approach and methodology is outlined in the American Water Works Association (AWWA) M1 Manual, Principles of water rates, fees and charges. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. These three analyses are illustrated below in Figure ES - 1.

Figure ES – 1
Overview of the Comprehensive Water Rate Analyses



The above framework for reviewing and evaluating the District's water rates and was utilized in the development of this study.

Key Water Rate Study Results

The water rate study technical analysis was developed based on the District's operating and capital costs necessary to provide water service to the District's customers. The water rate analysis resulted in the following findings, conclusions, and recommendations.

- A revenue requirement analysis was developed for the review period of FY 2018/19 through FY 2022/23.
- The District's FY 2017/18 adopted operating and maintenance (O&M) budget was used as the starting point of the analysis.
- O&M expenses are projected to increase at inflationary levels with no assumed changes to levels of service or anticipated extraordinary expenses.
- A cost of service analysis was developed to review the equity of the existing rates and proportionally allocate the revenue requirement to the various customer classes and tiers.
- The results of the cost of service analysis provided the unit costs (i.e., cost-based rates) which were used to establish the proposed rates.
- The study has developed proposed rates for the FY 2018/19 through FY 2022/23 time period, by class of service.
- The study was prepared based on a generally accepted rate setting methodology (AWWA M1 Manual) to meet the intent of Proposition 218.

Summary of the Water Revenue Requirement Analysis

A revenue requirement analysis is the first analytical step in the development of the water rate study. This analysis determines the adequacy of the level of current water rates. From this analysis, a determination can be made as to the overall level of water revenue adjustments needed to provide adequate and prudent funding for both operating and capital needs.

For this study, the revenue requirement was developed for a projected time period (FY 2017/18 – FY 2022/23). A multi-year time frame is recommended to better anticipate future financial requirements and allow the District, if necessary, to begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rate levels. For the revenue requirement analysis, a "cash basis" approach was utilized. The "cash basis" approach is the most commonly used methodology by municipal utilities to set their revenue requirement and it includes an analysis of O&M expenses, transfer payments, debt service, and capital projects funded from rates. This is also the method used historically by the District in past rate studies. The primary financial inputs in the development of the revenue requirement analysis were the District's adopted FY 2017/18 budget, historical billed customer and consumption data, and the District's most current capital improvement plan.

Once the operating and maintenance expenses have been projected over the time period, based on budgeted expenses and historical inflationary factors, the next step is to develop the capital improvement funding plan. The proper and adequate funding of capital projects is important to help minimize rates over time. A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates. Provided below in Table ES - 1 is a summary of the capital funding plan over the five-year rate setting period which was based on the five year CIP adopted March 22, 2017.

ES – 1
Overview of the Water Capital Improvement Plan ($000s)

Description	2018-19	2019-20	2020-21	2021-22	2022-23
Jenny Lind - Pretreatment (Cal-OES/FEMA)	$1,000	$0	$0	$0	$0
West Point - AMR/AMI Meter Program (Phase 1)	175	150	0	0	0
West Point - Wilson Dam	250	0	0	0	0
Ebbetts Pass - Techite Pipeline	625	0	0	0	0
Ebbetts Pass - Reach 1 Pipeline	2,500	0	0	0	0
Ebbetts Pass - Sawmill Tank / Repair & Paint	500	0	0	0	0
Copper Cove - Tank B /Repair & Paint	0	250	0	0	0
Copper Cove - Clearwell/Repair & Paint	0	500	0	0	0
Ebbetts Pass - Hunters Clearwell / Repair & Paint	250	250	0	0	0
Sheep Ranch - New Water Plant & Clearwell	200	600	200	0	0
West Point - Backup Water Filter	250	750	250	0	0
Sheep Ranch - White Pines/Blagen Mill Pond	250	3,500	0	0	0
Jenny Lind - A-B Transmission Main	0	0	0	0	3,500
Copper Cove - Zone 'C' Pump Station & Transmission	0	500	1,500	3,500	0
Various - Pump Stations / Renovation	50	50	50	50	0
Various - Road Repairs	25	25	25	25	0
Various - Pipelines, Meters, Mapping	75	100	0	0	0
Total Capital Outlays	**$6,150**	**$6,675**	**$2,025**	**$3,575**	**$3,500**
Funding Sources					
R&R Funds	$4,895	$6,413	$1,263	$1,813	$3,500
Expansion Funds	513	263	763	1,763	0
Grant Funds	742	0	0	0	0
Other Funding	0	0	0	0	0
Total Funding Sources	$6,150	$6,675	$2,025	$3,575	$3,500

The District's approach for funding capital is slightly different from the average utility in that the District has two components of their water rates, an operations component and a Renovation & Replacement (R&R) component. The R&R rate component is a fixed amount of the overall rate designated for system renovation & replacement projects. The R&R component is within both the fixed charge and the consumption charge. It is important to note that the District's annual

depreciation expense is approximately $2.5 million (FY 2016/17) while the R&R rate component collections exceeds the annual deprecation.

The District has several expansion reserve funds that contain connect fees collected in the Districts different service areas. These funds are used for expansion projects in the areas that they were collected.

The revenue requirement analysis for District was developed to determine the necessary revenues to meet the costs of providing water service to the customers based on the specific costs of the water utility. Provided below, in Table ES – 2, is a summary of the revenue requirement analysis (financial plan) developed for the water utility. A more detailed analysis of the revenue requirements can be found in Section 3 of this report.

Table ES - 2
Summary of the Revenue Requirement Analysis (000's)

	Budget		Projected				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Sources of Funds							
Rate Revenue[1]	$10,813	$10,982	$11,078	$11,189	$11,301	$11,414	$11,528
Other Revenues	2,799	2,913	2,950	2,996	3,043	3,091	3,136
Total Sources of Funds	**$13,612**	**$13,895**	**$14,028**	**$14,185**	**$14,344**	**$14,505**	**$14,664**
Applications of Funds							
Total O&M Expenses	$10,259	$10,590	$10,784	$11,130	$11,471	$11,821	$12,185
Capital Funding	3,273	3,306	3,363	3,372	3,406	3,440	3,474
Debt Service	2,088	1,671	2,051	1,880	1,880	700	700
Change Working Capital	(2,521)	(1,707)	(1,978)	(1,827)	(1,832)	(656)	(665)
Total Applications of Funds	**$13,100**	**$13,859**	**$14,221**	**$14,555**	**$14,924**	**$15,305**	**$15,694**
Balance/(Deficit) Funds	**$512**	**$36**	**($193)**	**($370)**	**($580)**	**($800)**	**($1,030)**
Cumulative Bal./(Def.) of Rates	-5%	0%	2%	3%	5%	7%	9%
Proposed Adjustment	**0.0%**	**0.0%**	**1.7%**	**1.8%**	**1.8%**	**1.8%**	**1.9%**
Add'l Revenue with Rate Increase	$0	$0	$188	$395	$610	$832	$1,076

[1] Rate Revenue includes both R&R and Operational Rate Components.

As can be seen, the revenue requirement has summed O&M, transfers, annual debt service, rate funded capital, and reserve funding. The total revenue requirement is then compared to the total sources of funds which are annual rate revenues, at present rate and consumption levels, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. This deficiency of funds is then compared to the projection of rate revenues, at the new level of consumption, to determine the overall revenue adjustment needed to meet the costs of providing water service. It is important to note the "Bal./(Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years.

In FY 2018/19 the overall levels of water rate revenues need to be increased by 1.7% to meet the operating and capital needs of the District's water utility. It is proposed that this rate increase will be effective July 16, 2018. It is also recommended that the District adopt a 5-year rate

transition plan (FY 2018/19 – FY 2022/23) in order to adequately fund operations expenses as well as meeting prudent financial metrics. With this in mind, it is proposed that the District also raise rates in FY 2019/20 by 1.8% through FY 2021/22 and 1.9% in FY 2022/23.

Based on the revenue requirement analysis developed, HDR has concluded that the District will need to adjust the level of water rate revenues as noted above to meet annual O&M and capital expenses over the next five years. HDR has reached this conclusion for the following reasons:

- Revenue adjustments are necessary to meet the operating and capital costs of providing water service to the District's customers.
- Revenue adjustments are necessary to reflect the reduction in annual water consumption due to the recent drought conditions and State mandated conservation targets.
  - This new level of consumption is reflective of the new level of water consumption for the foreseeable future.
- The proposed revenue adjustments enhance the District's financial health and provide long-term sustainable funding levels.
- Prior to the end of the financial planning projected period, the District should complete a review of the water revenue levels and costs at that time.

In reaching this conclusion, HDR would recommend that the District adopt the proposed revenue adjustments to provide sufficient funding for the projected operating and capital needs of the water utility. Detailed technical exhibits of the revenue requirement analysis have been included within the Technical Appendix.

Summary of the Water Cost of Service Analysis

A cost of service analysis determines the equitable allocation of the revenue requirement to the various customer classes of service (e.g., Residential, Non-Residential). The objective of the cost of service analysis is different from determining the revenue requirement analysis. Whereas a revenue requirement analysis determines the utility's overall financial needs, the cost of service analysis determines the proportional and equitable manner to collect that revenue requirement from each customer class of service based on how each customer class utilizes (benefits) from the system.

After analyzing the customer classes and usage it is recommended that some change be made to the customer classes of service. The District's current structure is the same for all customers regardless of usage. The proposed residential rate is a minor change from the current rate in that an additional consumption tier be added to account for water consumption that was previously included in the fixed charge. Having water consumption included in the fixed change is not uncommon but is becoming less popular over the last several years. Another change to the residential rate structure is the variable tier structure. The current rate structure's tier sizes increase as the meter size changes. The idea for eliminating the variable tier structure is that the size of a customer's meter does not reduce the cost of providing the customer water to that customer. Also it should noted that the 99% of all residential customers have a 5/8" meter and having variable tiers is an unneeded complexity.

Rates for Non-Residential and Irrigation/Other customers were created to better align customers with type of use. Uniform rates were developed for the Non-Residential and Irrigation/Other customers while the meter charge will remain the same as the residential customer class rates. As utilities have implement tiered rate structures often non-residential customer classes have not moved to tiered rates. Part of the rational for not having non-residential customers on a tiered rate structures is that the volume of water being used does not necessarily mean the customer is using water in a wasteful way.

In summary form, the cost of service analysis began by functionalizing the revenue requirement for the District's water utility. The functionalized revenue requirement was then allocated into the various cost components (e.g., average day, peak day, customer related). The individual allocation totals were then proportionally distributed to the various customer classes of service based on the appropriate distribution factor. The distributed expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Given this, proposed water rates can be developed that reflect the costs incurred to provide service to these customers. As a result, the cost of service proportionally allocated costs to residential, non-residential, and irrigation/other customer classes. Table ES - 3 provides the summary of the cost of service analysis for the FY 2018/19 of which the cost of service analysis was performed.

Table ES - 3
Summary of the Cost of Service Analysis ($000)

Class of Service	Present Revenues (FY 2018/19)	Allocated Costs	$ Difference	% Difference
Residential	$10,068	$10,286	($218)	2.2%
Non-Residential	758	748	$10	-1.3%
Irrigation/Other	253	237	15	-6.1%
Total	$11,078	$11,271	($193)	1.7%

The cost of service study allocates the proportional share of the revenue requirement to each customer class based on their use of the system and facilities. The results of the analysis indicate that cost differences exist between the various customer classes of service. The results show that, for example, residential customers' proportional share of costs is greater than current revenues. This is the result of the allocation of costs and residential customer's proportional share of costs based on average day, peak day, and customer related costs. This means, that the rates for residential customers should be increased to cover their related costs to provide service, in this case would be 2.2%. It is important to understand that a cost of service analysis is based on a projection of customer consumption data based on recent year's consumption history. The key outcome of the cost of service analysis is the unit costs (e.g., $/CCF). The unit costs provide the cost basis for the development of the proposed water rates.

The cost of service goes a step further than just allocating costs to customer classes. The analysis allocates costs to the tiers of residential which is done in order to satisfy the administrative record requirements of Proposition 218, especially in light of the San Juan Capistrano Decision.

Provided in Table ES - 4 is a summary of the consumption related unit costs derived in the cost of service analysis that will be used to develop the proposed rate designs.

Table ES – 4
Summary of the Consumption Related Unit Costs ($ / CCF)

	Residential	Non-residential	Irrigation/Other
Tier 1	$1.09	N/A	N/A
Tier 2	1.14	N/A	N/A
Tier 3	1.56	N/A	N/A
Tier 4	1.77	N/A	N/A
All Consumption	N/A	$1.47	$1.78

As can be seen in Table ES - 4, for residential customers, the tiered rate structures have been maintained for residential customers and the costs of providing service at each tier have been developed based on the peaking factors and system requirements to provide water service at higher levels.

Section 4 of this report provides a detailed discussion of the cost of service analysis conducted for the District and the development of the unit costs provided in Table ES - 4. Given the results of the cost of service analysis, HDR would recommend that the unit costs, as developed, are the basis for the rate designs. The Technical Appendix contains the various exhibits and additional details associated with the cost of service analysis.

Summary of the Present and Proposed Water Rate Designs

The final step of the comprehensive rate study process is the design of water rates to collect the desired levels of revenue, based on the results of the revenue requirement and cost of service analysis. To review, the revenue requirement analysis provides a set of recommendations in the form of annual revenue adjustments - that is, the level of total revenues necessary to provide sufficient funding - while the cost of service analysis results provide recommendations as to how the revenue is collected proportionally from each customer classes of service. The rate design, therefore, incorporates both of the prior analyses to design the proposed rates for the District.

Developing cost-based and equitable rates is of paramount importance in developing proposed water rates. Given this, the District's proposed water rates have been developed with the intent of meeting the legal requirements of California constitution article XIII D, section 6 (Article XIII D). A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally allocated among the various customer classes of service. HDR would point out that there is no single methodology for equitably assigning costs to the various customer groups. The American Water Works Association (AWWA) M1 Manual clearly delineates various methodologies which may be used to establish cost-based rates. Article XIII D does not prescribe a particular methodology for establishing rates; consequently, HDR developed the District's proposed water rates based on the AWWA M1 manual methodology to meet the

requirements of Article XIII D and recent legal decisions to provide an administrative record of the steps taken to establish the District's water rates.

HDR is of the opinion that the proposed rates comply with legal requirements of Article XIII D. HDR reaches this conclusion based upon the following:

- The revenue derived from water rates does not exceed the funds required to provide the property related service (i.e., water service). The proposed rates are designed to collect the overall revenue requirement of the District's water utility.
- The revenues derived from water rates shall not be used for any purpose other than that for which the fee or charge is imposed. The revenues derived from the District's water rates are used exclusively to operate and maintain the District's water system.
- The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel. This study has focused on the issue of proportional assignment of costs to customer classes of service. The proposed rates have appropriately grouped customers into customer classes of service (Residential, non-residential, and Irrigation/other) that reflect the varying consumption patterns and system requirements of each customer class of service. The grouping of customers and rates into these classes of service creates the equity and fairness expected under Article XIII D by having differing rates reflecting both the *level* of revenue to be collected by the District for sufficient funding and the *manner* in which these costs are incurred and equitably assigned based on each classes' proportional impact and burden on the water system and water resources.

Given the prior discussion of the difference in the consumption patterns of the various customer classes and the need to develop rates based on cost of service principles, the proposed water rates were developed for the District's customers based on the cost of service unit costs as shown in Table ES - 4. However, the proposed monthly service charge for residential, non-residential and irrigation/other customers is moved to the same rates based on meter size which varies by size based on the current meter equivalency factors based on a 5/8" meter.

As noted, the consumption characteristics for each customer class were reviewed. Based on the review of the residential customer characteristics, the sizing of the consumption tiers is maintained based on the current consumption patterns. The pricing of the tiers is revised, however, to reflect the cost of service analysis unit costs which specifically reflect the cost of providing service at higher consumption levels. The decision was also made to change the Non-residential and irrigation/other rate to a single rate for all water consumption.

Provided in Table ES - 5 is a summary of the present and proposed bi-monthly water rates over the five-year review period.

Table ES-5 Current and Proposed Rates						
	Present Rates	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Service Charge (Bi-Monthly)						
5/8"	$113.56	$112.28	$113.68	$115.10	$116.54	$118.10
3/4"	170.34	168.42	170.52	172.66	174.84	177.18
1"	283.90	280.70	284.20	287.76	291.38	295.28
1.5"	567.82	561.42	568.42	575.54	582.78	590.56
2"	908.50	898.26	909.46	920.86	932.46	944.92
3"	1,817.00	1,796.52	1,818.90	1,841.68	1,864.88	1,889.80
4"	2,839.06	2,807.06	2,842.04	2,877.64	2,913.88	2,952.82
Commodity Charge ($/100 CF)						
Tier 1, (0 - 1,000 CF) [1]	$0.00	NA	NA	NA	NA	NA
Tier 2, (1,001 - 6,000 CF) [2]	1.44	NA	NA	NA	NA	NA
Tier 3, (6,001 - 12,000 CF) [1]	1.80	NA	NA	NA	NA	NA
Tier 4, (12,001 CF and Over) [1]	2.30	NA	NA	NA	NA	NA
Residential						
Tier 1, (0 - 1,000 CF)	NA	$1.09	$1.11	$1.13	$1.15	$1.17
Tier 2, (1,001 - 6,000 CF)	NA	1.14	1.16	1.18	1.20	1.22
Tier 3, (6,001 - 12,000 CF)	NA	1.56	1.58	1.60	1.62	1.64
Tier 4, (12,001 CF and Over)	NA	1.77	1.79	1.81	1.83	1.86
Non-Residential						
All Consumption	NA	$1.47	$1.48	$1.50	$1.52	$1.54
Irrigation/Other						
All Consumption	NA	$1.78	$1.80	$1.83	$1.85	$1.87

[1] Present tier sizes depend on meter Size, tiers shown assume a ¾" meter
[2] Proposed rates assume all meters sizes have the same tier size

As can be seen in Table ES - 5, the service charge rate structure has been maintained and the proposed rates have been adjusted to reflect the overall revenue needs of the water utility based on the revenue requirement and cost of service analysis unit costs for FY 2018/19. The proposed consumption charges are based on each customer class's contribution to the costs of the system and are based on the unit costs calculated and shown in Table ES - 4. It is recommended that the proposed rates be effective July 16, 2018. After the initial rate adjustment, the future adjustments will be "across the board" meaning all components will be adjusted proportionally based on the overall rate revenue adjustment.

Section 5 of this report provides a detailed discussion of the present and proposed water rates.

Water Shortage Rates

Water shortage rates were developed as a part of this study. Water shortage rates are a tool the District can utilize when revenue declines due to conservation when a drought is declared. The District does not presently have a water shortage rate. The water shortage rate is phased rate that increase as the target conservation increases. When designed properly water shortage rates are two effects, helps the District recover lost revenue and to discourage wasteful or inefficient use. The rates were developed to recover adequate revenue to continue to operate the utility in a responsible way. Five levels of water shortage rates were developed for a range of conservation levels. These ranges are:

- Advisory Stage 1 - less than 10%,
- Alert Stage 2 - between 11% and 15%
- Moderate Stage 3 - between 16% and 25%,
- Critical Stage 4 – between 26% and 49%
- Emergency State 5 - over 50%.

The water shortage rate is applied to all units of consumption regardless of customer class or consumption tier. The water shortage rates by stage are provided in table ES-6 below. It should be noted that the surcharge is not cumulative, when the stage changes from one level to the next stage the prior stage's rate is not added to the new shortage rate.

Table 5 - 11
Water Shortage Rates per $/100 cf

Stage	% Target Reduction	Current	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Advisory Stage 1	<10%	$0.00	$0.15	$0.15	$0.16	$0.16	$0.17
Alert Stage 2	11% - 15%	0.00	0.20	0.21	0.22	0.23	0.24
Moderate Stage 3	16% - 25%	0.00	0.35	0.36	0.37	0.38	0.39
Critical Stage 4	26% - 49%	0.00	0.80	0.82	0.84	0.86	0.88
Emergency Stage 5	>50%	0.00	1.29	1.32	1.35	1.38	1.41

A more detailed discussion of the water shortage rates is discussed in section 5.7 in the report.

Water Rate Study Recommendations

Based on the results of the water rate study, HDR recommends the following:

- Rate adjustments are necessary to prudently fund operating and capital renovation and replacement expenses.
- Water revenues should be adjusted annually by 1.7% for FY 2018/19, 1.8% for FY 2019/20 through FY 2021/22, and adjusted by 1.9% in FY 2022/23 based on the projection of needs of the District's water utility.

- The proposed rates reflect the results of the cost of service analysis and the proportional allocation of costs to each customer class of service.
- HDR would recommend the adoption of a multi-year rate plan to implement the proposed rates through FY 2022/23.

Summary of the Water Rate Study

This completes the summary of the development of the comprehensive water rate study for the Calaveras County Water District. The focus of this study has been the prudent and adequate funding of the utility, and developing the cost-basis for the proposed rates. A full and complete discussion of the development of the comprehensive water rate study can be found in following sections of this report.

1. Introduction and Overview

1.1 Introduction

HDR was retained by the Calaveras County Water District (District) to conduct a comprehensive water rate study. The objective of the rate study was to review the District's operating and capital costs in order to develop a financial plan and develop proposed cost-based and proportional rates for the District's water customers. This study determined the adequacy of the existing water rates and provides the framework and cost basis for any needed future adjustments.

The District owns and operates a water supply, transmission, and distribution system. The costs associated with providing water supply, plus the costs of distributing water to customers, has been developed based on the District's adopted budgets and financial information and included within the development of the proposed rates.

1.2 Goals and Objectives

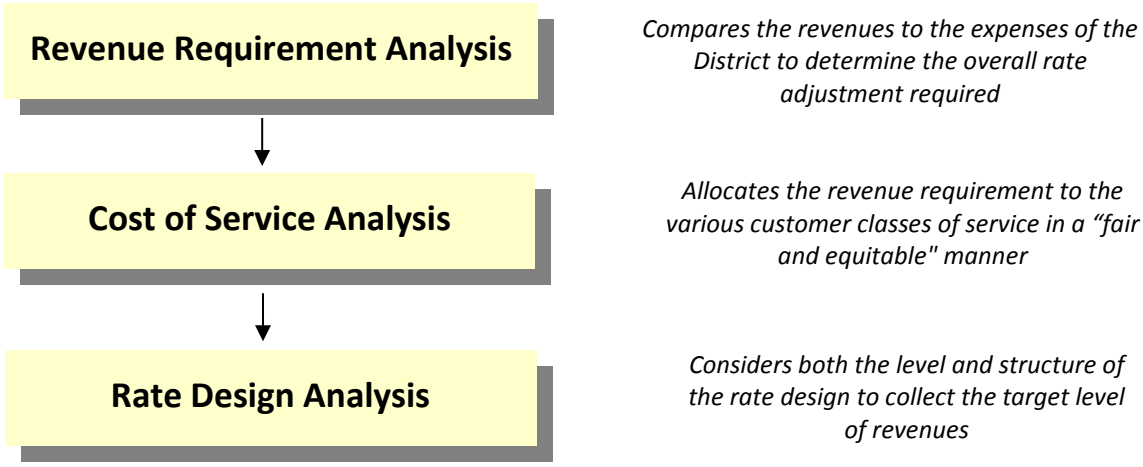
The District had a number of key objectives in developing the water rate study. These key objectives provided a framework for policy decisions in the analysis that follows. These key objectives were as follows:

- Develop the study in a manner that is consistent with the principles and methodologies established by the American Water Works Association (AWWA), M1 Manual, Principles of Water Rates, Fees, and Charges.
- When establishing the District's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the District's system.
- Review the District's rates utilizing "generally accepted" rate making methodologies to determine adequacy and equity (proportionality) of the utility rates.
- Develop a final proposed financial plan which adequately supports the utility's funding requirements, while attempting to minimize overall impacts to rates.
- Propose rates designed to meet the legal intent of Article XIII D.

1.3 Overview of the Rate Study Process

User rates must be set at a level where a utility's operating and capital expenses are met with the revenues received from customers. This is an important point, as failure to achieve this objective may lead to insufficient funds to maintain system integrity. To evaluate the adequacy of the existing rates, a comprehensive rate study is often performed. A comprehensive water rate study consists of three interrelated analyses. Figure 1 - 1 provides an overview of these analyses.

Figure 1 – 1
Overview of the Comprehensive Water Rate Analyses



The above framework for reviewing and evaluating rates was utilized for the District's water system.

1.4 Organization of the Study

This report is organized in a sequential manner that first provides an overview of utility rate setting principles, followed by sections that detail the specific steps used to review the District's water rates. The following sections comprise the District's water rate study report:

- **Section 2** – Overview of Water Rate Setting Principles
- **Section 3** – Development of the Revenue Requirement Analysis
- **Section 4** – Development of Cost of Service Analysis
- **Section 5** – Development of the Proposed Rate Designs

A Technical Appendix is attached at the end of this report, which details the various technical analyses that were undertaken in the preparation of this study.

1.5 Summary

This report will review the comprehensive water rate analyses prepared for the District. This report has been prepared utilizing generally accepted water rate setting techniques as outlined in the AWWA M1 Manual.

2. Overview of Water Rate Setting Principles

2.1 Introduction

This section of the report provides background information about the water rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining a revenue requirement, the cost of service analysis, and rate design. This information is useful for gaining a better understanding of the details presented in Sections 3 through 5 of this report.

2.2 Generally Accepted Rate Setting Principles

As a practical matter, all utilities should consider setting their rates around some generally accepted or global principles and guidelines. Utility rates should be:

- Cost-based, equitable, and set at a level that meets the utility's full revenue requirement.
- Easy to understand and administer.
- Designed to conform to "generally accepted" rate setting techniques.
- Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements.
- Established at a level that is stable from year-to-year from a customer's perspective.
- Meet legal and regulatory requirements.

2.3 Determining the Revenue Requirement

Most public utilities utilize the "cash basis" [1] approach for establishing the revenue requirement for rate setting purposes. This approach conforms to most public utility budgetary requirements. A public utility totals its cash expenditures for a period of time to determine required revenues. The revenue requirement for a public utility is usually comprised of the following costs or expenses:

- **Total Operating Expenses:** This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments (e.g., reserve transfers). Operation and maintenance expenses include the materials, electricity, labor, supplies, etc., necessary to provide service.
- **Total Capital Expenses:** Capital expenses are calculated by adding debt service payments (principal and interest) to capital improvements financed with rate revenues. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes depreciation expense to stabilize the annual revenue requirement.

[1] "Cash basis" as used in the context of rate setting is not the same as the terminology used for accounting purposes and recognition of revenues and expenses. As used for rate setting, "cash basis" simply refers to the specific cost components to be included within the revenue requirement analysis.

Under the "cash basis" approach, the sum of the total O&M expenses plus the total capital expenses equals the utility's revenue requirement during any selected period of time (historical or projected).

Table 2 – 1
Cash versus Utility Basis Comparison

	Cash Basis		Utility Basis (Accrual)
+	O&M Expenses	+	O&M Expenses
+	Taxes/Transfer Payments	+	Taxes/Transfer Payments
+	Rate Funded Capital (≥ Depreciation Expense)	+	Depreciation Expense
+	Debt Service (Principal + Interest)	+	Return on Investment
=	**Total Revenue Requirement**	=	**Total Revenue Requirement**

Note that the two portions of the capital expense component (debt service and capital improvements financed from rates) are necessary under the cash basis approach because utilities generally cannot finance all their capital facilities with long-term debt. At the same time, it is often difficult to pay for capital expenditures on a "pay-as-you-go" basis given that some major capital projects may have significant rate impacts upon a utility, even when financed with long-term debt. Many utilities have found that some combination of pay-as-you-go funding and long-term financing will often lead to minimization of rate increases over time.

2.4 Analyzing Cost of Service

After the total revenue requirement is determined, it is equitably distributed to the users of the service. The distribution, analyzed through a cost of service analysis, reflects the cost relationships for producing and delivering water services. A cost of service analysis requires three analytical steps:

1. Costs are ***functionalized*** or grouped into the various cost categories related to providing service (supply, distribution, pumping, etc.). This step is largely accomplished by the utility's accounting system.
2. The functionalized costs are then ***allocated*** to specific cost components. Allocation refers to the arrangement of the functionalized data into cost components. For example, a water utility's costs are typically allocated as average day, peak day, or customer-related.
3. Once the costs are allocated into components, they are proportionally ***distributed*** to the customer classes of service (e.g., residential, non-residential, irrigation). The distribution is based on each customer class' relative contribution (proportional share) of each cost component (i.e., benefits received from and burdens placed on the system and its resources). For example, customer-related costs are distributed to each class of service based on the total number of customers in that class of service. Once costs are

distributed, the unit costs from each customer class of service required to achieve cost-based rates can be determined.

2.5 Designing Water Rates

Rates that meet the utility's objectives are designed based on both the revenue requirement and the cost of service analysis. This approach results in rates that are strictly cost-based and does not consider other non-cost based goals and objectives (conservation, economic development, ability to pay, revenue stability, etc.). In designing the final proposed rates, factors such as ability to pay, continuity of past rate philosophy, economic development, ease of administration, and customer understanding may be taken into consideration. However, the proposed rates must take into consideration each customer class's proportional share of costs allocated through the cost of service analysis to meet the intent of Proposition 218.

2.6 Economic Theory and Rate Setting

One of the major justifications for a comprehensive rate study is founded in economic theory. Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained. This statement's implications on utility rate designs are significant. For example, a water utility usually incurs capacity-related costs to meet summer outdoor watering needs. It follows that the customers who create excessive peak demands on the system and create the need for upsizing of the distribution system should pay for those over-sized facilities in proportion to their contribution to total peaking requirements. When costing and pricing techniques are refined, consumers have a more accurate understanding of what the commodity costs to produce and deliver.

"Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained."

2.7 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set water rates. These principles and techniques will become the basis for the District's water rate study.

3. Development of the Revenue Requirement

3.1 Introduction

This section describes the development of the revenue requirement for the District. The District provided detailed revenue and expenses data (e.g., adopted budgets, audited financial statements) for the water system that allowed for the development of the revenue requirement. The revenue requirement analysis is the first analytical step in the comprehensive rate study process. This analysis determines the adequacy of the District's overall water rates at current rate levels. From this analysis, a determination can be made as to the overall level of revenue adjustment needed to provide adequate and prudent funding for both operating and capital needs. HDR developed an independent analysis based on information provided by the District as part of the development of the proposed cost-based rates.

3.2 Determining the Revenue Requirement

In developing the District's revenue requirement, the water utility must be properly funded and financially "stand on its own" given that water rates are the primary funding source for the District. As a result, the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the District's water system on a financially sound and prudent basis.

3.3 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the District was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for the six-year time period of FY 2017/18 – FY 2022/23. This included the budget year (FY 2017/18) followed by a projected five-year rate setting period (FY 2018/19 – FY 2022/23). Reviewing a multi-year time period is recommended in order to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the District can begin planning for these changes sooner, thereby minimizing short-term revenue needs and overall long-term revenue levels.

The second step in determining the revenue requirement for the District was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most common methodology used by municipal utilities to set their revenue requirement. This is also the methodology that the District has historically used to establish its water revenue requirement. Table 3 - 1 provides a summary of the "cash basis" approach and cost components used to develop the District's revenue requirement.

Table 3 – 1
Overview of the District's "Cash Basis" Revenue Requirement

+	Water Operation and Maintenance Expenses
+	Debt Service (Principal + Interest) – Existing and Future
+	Rate Funded Capital
±	Reserve Funding
=	**Total Water Revenue Requirement**
−	Miscellaneous Revenues
=	**Net Revenue Requirement (Balance Required from Water Rates)**

Given a time period around which to develop the revenue requirement, and a method to accumulate the costs, the focus shifts to the projection of the District's revenues and expenses over the test period.

The primary financial inputs in the development of the revenue requirement were the District's FY 2017/18 adopted budget, the FY 15/16 billed customer and consumption data, and the capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the District's water revenue requirement analysis.

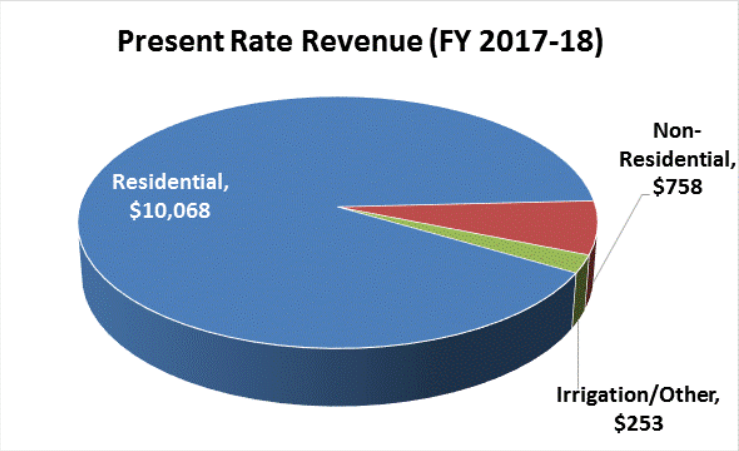
3.4 Projecting Rate and Other Miscellaneous Revenues

The starting point of the revenue requirement is to develop a projection of the water rate revenues, at present rate levels. In general, this process involved developing projected billing units for each customer group (e.g., residential, non-residential, irrigation/other). The billing units for each customer group were then multiplied by the applicable current water rates. This method of independently calculating revenues links the projected revenues used within the analysis to the projected billing units. It also helps to confirm that the billing units used within the study are reasonable for purposes of projecting future revenues, allocating costs, and ultimately, establishing proposed rates.

". . . the State of California implemented additional required conservation savings in 2016 which will impact the level of consumption and resulting consumption based revenues."

A key aspect of the projection of water rate revenues was to develop a projection of consumption levels considering the recent drought. In addition, the State of California implemented additional required conservation savings through 2016 which impacted the level of consumption and resulting consumption-based revenues. In an effort to reflect anticipated future consumption levels, and in discussion with District staff, it was determined that the consumption levels of calendar year 2016 would be used as they appear to reflect "normal" consumption for the next several years given customers response to the drought and changes in behavior as a result of conservation practices. Overall

future consumption levels will also be impacted by the State's conservation plan which, when adopted, will outline the conservation practices the District will need to implement.



The District currently has one rate structure for all customer class. As noted above, the projection of revenues, and subsequent cost allocation, is based on specific customer classes of service. Given this, a revenue projection was developed for each of the customer classes of service. The majority of the District's rate revenues are derived from the residential customer class. The District also has customer classes of non-residential and irrigation/other. In total, and at current rate levels, the District is projected to receive approximately $10.9 million in rate revenue in FY 2017/18, based on the projection of metered consumption levels which includes the R&R revenue. Over time, the study has assumed a conservative level of customer growth, based on historical growth levels, that is less than 1.0% per year. This results in rate revenues increasing to approximately $11.5 million, at present rate levels, in FY 2022/23 as a result of the estimated growth on the system.

In addition to rate revenues, the District receives miscellaneous revenues from operations. These are revenues are property tax, interest earnings, fees, rental income, and other miscellaneous revenues. In total, the District is projected to receive approximately $2.8 million in miscellaneous revenues in FY 2017/18. The majority of this revenue is derived from property tax which is expected to be $1.7 million in FY 2017/18. This amount is anticipated to increase over the projected five-year rate setting period and be approximately $3.1 million in FY 2022/23.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the District's water utility has total projected revenues of approximately $13.6 million in FY 2017/18, increasing to approximately $14.6 million by FY 2022/23.

3.5 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the District to provide water service (supply, treatment, and distribution) as well as to operate and maintain the existing infrastructure. As mentioned, the District provided detailed O&M expenses based on the FY 2017/18 adopted budget. The budgeted O&M expenses were projected over the time period based on historical inflationary factors experienced by the District and the general economy.

Based on the FY 2017/18 budget, the total O&M expenses for the District are $10.2 million. Over the planning horizon, total O&M expenses for the District are projected to increase to approximately $12.2 million by FY 2022/23 based on historical inflationary impacts. This reflects an average increase of 2.8% per year. It is important to note that the District's O&M expenses

fluctuate from year to you based on the cyclical nature of some expenses. For example, election costs and mandated studies which are done every few years.

3.6 Projecting Capital Funding Needs

A key component in the development of the water revenue requirement was properly and adequately funding capital improvement needs. One of the major issues facing utilities across the U.S. is the amount of deferred capital projects and the funding pressure from growth/expansion-related improvements. The proper and adequate funding of capital projects is an important issue for all water utilities and is not just a local issue or concern of the District.

In general, there are three types of capital projects that a utility may need to fund. These include the following types:

- Renovation & replacement projects
- Growth / capacity expansion projects
- Regulatory-related projects

A renovation and replacement project is essentially a project required for maintaining the existing system that is in place today. As the existing plant or pipelines become worn out, obsolete, etc., the utility should be making continuous investments to maintain the integrity of the facilities. In contrast to this, a utility may make capital investments to expand the capacity of facilities to accommodate future capacity needs (customers). Finally, certain projects may be a function of a regulatory requirement in which the Federal or State government mandates the need for an improvement to the system to meet a regulatory standard. Understanding these different types of capital projects is important because it may help to explain why costs are increasing and the cost drivers for any needed rate adjustment. In addition, and more importantly, the way in which projects are funded may vary by the type of capital project. For example, renovation and replacement projects may be paid for via rates and funded on a "pay-as-you-go basis." In contrast to this, growth or capacity expansion projects may be funded via the collection of development or connection fees (i.e., growth-related charges) in which new development pays an equitable share of the cost of facilities necessary to serve their development (impact). Finally, regulatory projects may be funded by a variety of different means, which may include rates, long-term debt, grants, etc.

While the above discussion appears to neatly divide capital projects into three clearly defined categories, the reality of working with specific capital projects may be more complex. For example, a pump may be replaced, but while being replaced, it is up-sized to accommodate greater capacity to serve increasing demands or new development. There are many projects that share these "joint" characteristics. At the same time, projects may not be "replacement" related, but rather "improvement" related.

For purposes of developing the capital funding plan the District provided its capital improvement plan (CIP) which has been summarized in Table 3 - 2 along with the expected funding sources developed as part of the rate study.

Table 3-2 Overview of the Water Capital Improvement Plan ($000s)					
Description	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Jenny Lind - Pretreatment (Cal-OES/FEMA)	$1,000	$0	$0	$0	$0
West Point - AMR/AMI Meter Program (Phase 1)	175	150	0	0	0
West Point - Wilson Dam	250	0	0	0	0
Ebbetts Pass - Techite Pipeline	625	0	0	0	0
Ebbetts Pass - Reach 1 Pipeline	2,500	0	0	0	0
Ebbetts Pass - Sawmill Tank / Repair & Paint	500	0	0	0	0
Copper Cove - Tank B /Repair & Paint	0	250	0	0	0
Copper Cove - Clearwell/Repair & Paint	0	500	0	0	0
Ebbetts Pass - Hunters Clearwell / Repair & Paint	250	250	0	0	0
Sheep Ranch - New Water Plant & Clearwell	200	600	200	0	0
West Point - Backup Water Filter	250	750	250	0	0
Sheep Ranch - White Pines/Blagen Mill Pond	250	3,500	0	0	0
Jenny Lind - A-B Transmission Main	0	0	0	0	3,500
Copper Cove - Zone 'C' Pump Station & Transmission	0	500	1,500	3,500	0
Various - Arc Flash Assessment	0	0	0	0	0
Various - Tanks / Replacement, Repairs, Painting	0	0	0	0	0
Various - Pump Stations / Renovation	50	50	50	50	0
Various - Road Repairs	25	25	25	25	0
Various - Pipelines, Meters, Mapping	75	100	0	0	0
Total Capital Outlays	**$6,150**	**$6,675**	**$2,025**	**$3,575**	**$3,500**
Funding Sources					
R&R Funds	$4,895	$6,413	$1,263	$1,813	$3,500
Expansion Funds	513	263	763	1,763	0
Grant Funds	742	0	0	0	0
Other Funding	0	0	0	0	0
Total Funding Sources	$6,150	$6,675	$2,025	$3,575	$3,500

The capital improvements are primarily related to renovation and replacement of aging water system as well as annual equipment purchases. While the total amount required to fund projects may vary from year-to-year, the rate study capital funding plan has developed a plan to provide a consistent funding source for capital improvements. As a point of reference, the District's annual depreciation expense was approximately $2.5 million for FY 2015/16.

A desirable and recommended minimum funding target for rate funded capital is an amount equal to or greater than annual depreciation expense. As can be seen, this financial plan provides the District with funding in excess of annual depreciation expense. This is critical as the replacement cost of an asset may be between 1.5 – 2.0 times the original costs. This funding level will remain important to fund as the District's water system continues to age and the demand for

funding renovation and replacement projects increases. In developing this financial plan, HDR and the District have attempted to minimize rate impacts while funding the necessary capital improvement projects.

The District's approach for funding capital is slightly different from the average utility in that the District has two components of their water rates, an operations component and a Renovation & Replacement (R&R) component. The R&R rate component is a fixed amount of the overall rate designated for system renovation & replacement projects. The R&R component is within both the fixed charge and the consumption charge. It is important to note that the District's annual depreciation expense is approximately $2.5 million (FY 2016/17), and that while the R&R rate component collections exceeds the annual deprecation. The R&R fund revenue also is used to pay debt service.

The District has several expansion reserve funds that contain connect fees collected in the Districts different service areas. These funds are used for expansion projects in the areas that they were collected.

3.7 Projection of Debt Service

The District currently has five (5) outstanding debt issues that extend into our test period for the water utility: significantly the Umpqua Capital R&R Loan, New Hogan Loan, Administration building Loan and other smaller loans for smaller capital. The total annual debt service payment is approximately $1.6 million in FY 2017/18. It is important to note that the largest loan payment will be paid off in FY 20/21 which is approximately $1.1 million per year. For this analysis no additional (new) long-term debt issues are assumed over the review period.

As part of this study HDR is not providing municipal advice as it relates to bonds, terms, or structures of debt issuance. Rather, this study is simply identifying the existing annual debt service payments for rate setting purposes.

3.8 Reserve Funding

The final component of the revenue requirement analysis is the transfer to, or from, reserves to either maintain prudent ending fund balances or for future funding of specific projects. In future years as rates are adjusted and reach sufficient levels, funds are being transferred to the operating reserves to meet minimum target levels. A more detailed discussion of the District's water reserve funds in provided in Section 3.10.

3.9 Summary of the Revenue Requirement

Given the above projections of revenues and expenses, a summary of the District's revenue requirement analysis can be developed. In developing the revenue requirement analysis, consideration was given to the financial planning considerations of the District. In particular, emphasis was placed on minimizing rates, while providing adequate funds to support the operational activities and capital improvement needs throughout the test period. Presented below in Table 3 - 3 is a summary of the District's revenue requirement based on projected expenses and current rates. Detailed exhibits of this analysis can be found in the Technical Appendices.

Table 3-3 Summary of the Revenue Requirement Analysis (000's)							
	Budget		Projected				
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Sources of Funds							
Rates	$10,813	$10,982	$11,078	$11,189	$11,301	$11,414	$11,528
Other Revenues	2,799	2,913	2,950	2,996	3,043	3,091	3,136
Total Sources of Funds	**$13,612**	**$13,895**	**$14,028**	**$14,185**	**$14,344**	**$14,505**	**$14,664**
Applications of Funds							
Total O&M Expenses	$10,259	$10,590	$10,784	$11,130	$11,471	$11,821	$12,185
CIP from Rates	3,273	3,306	3,363	3,372	3,406	3,440	3,474
Debt Service	2,088	1,671	2,051	1,880	1,880	700	700
Change Working Capital	(2,521)	(1,707)	(1,978)	(1,827)	(1,832)	(656)	(665)
Total Applications of Funds	**$13,100**	**$13,859**	**$14,221**	**$14,555**	**$14,924**	**$15,305**	**$15,694**
Balance/(Deficit) Funds	**$512**	**$36**	**($193)**	**($370)**	**($580)**	**($800)**	**($1,030)**
Cumulative Bal./(Def.) of Rates	-5%	0%	2%	3%	5%	7%	9%
Proposed Adjustment	**0.0%**	**0.0%**	**1.7%**	**1.8%**	**1.8%**	**1.8%**	**1.9%**
Add'l Revenue with Rate Increase	$0	$0	$188	$395	$610	$832	$1,076

As can be seen, the revenue requirement has summed the O&M, annual debt service, rate funded capital, and reserve funding. The total revenue requirement is then compared to the total sources of funds which are the rate revenues, at present rate and consumption levels, and other miscellaneous revenues. From this comparison a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the rate revenues to determine the level of revenue adjustment needed to meet the revenue requirement. It is important to note the "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years.

In FY 2018/19 the overall level of revenues need to be increased over the test period to meet the operating and capital needs of the water utility. Based on the analysis, the District will need to adjust revenue levels starting in FY 2018/19 with a 1.7% adjustment. After that, adjustments of 1.8% are recommended for FY 2019/20 through FY 2021/22 followed by a 1.9% in FY 2022/23.

Based on the rate transition plan, as can be seen above in Table 3 – 3, the proposed annual rate adjustments (blue shaded line) have been developed to meet the operating and capital needs of the District.

3.10 Reserve Levels

In addition to the revenue requirement analysis, a key element of determining the financial health and sustainability of the District is to review the level of available reserve levels. Utilities can have several different reserves each with a different purpose. The typical types of reserves

utilities maintain are generally referenced as an operating reserve, a capital reserve, a connection (growth) fee, and in some cases an emergency and/or rate stabilization reserve. Each of these funds should have a target minimum ending balance that – for example, if reached or falls below - is a signal that the District should review the revenue sources associated with each fund. The minimum ending balances will vary depending on the purpose of the fund and the expected revenue sources.

For the District, there are three primary reserves. These are the operating, R&R, and restricted reserves. Each of these is discussed further below.

- **Operating Reserve**
  The operating reserve is in place to meet the District's annual cash flow needs. The target minimum ending balance for an operating reserve is 90 days of annual O&M expenses. This target results in a minimum ending balance of approximately $2.8 million on average over the five-year rate setting period. This target minimum is in place to help the utility target an amount that will be able to fund operations of the water utility should any issues adversely affect the District's revenue sources. Over the five-year rate setting period the operating reserve meets the minimum target after the final rate adjustment.
- **R&R Reserve Fund**
  The capital facilities reserve is used as the primary funding source for renovation and replacement capital improvement projects as well as fund related annual debt service payments. Over the 5-year period, the District R&R balance is expected to fluctuate from year to year depending on when the R&R projects scheduled to be done.

In addition to the above reserve funds the District also has several small Expansion Reserve Funds where connection fee revenue is collected. This is done so the funds customers contribute are spend on projects in the area they are located.

Each of the previously mentioned reserves were reviewed during the development of the rate study process with the focus being on meeting the targeted ending fund balances. A summary of the reserve target balances over the review period are shown in the chart below. The restricted reserve is not shown as only unrestricted cash balances are relevant to the target ending balance.

3.11 Debt Service Coverage Ratios

When long-term debt is issued, and specifically for municipal revenue bonds, the District enters into an agreement that requires a specific level of revenue be generated each year in excess of O&M expenses and annual debt service payments. This is known as a debt service coverage ratio. As noted previously, the District has five (5) outstanding debt issuances. Based on the proposed revenue adjustments, and subsequent increase in revenues, the District will be exceeding the minimum debt service coverage ratio of 1.20 which is a typical industry standard. As noted, HDR is not providing municipal advice as it relates to the District meeting debt service coverage ratios. The District will need to work with its financial advisor or legal counsel to determine the appropriate debt service coverage ratio calculation to meet any applicable legal bond covenants.

3.12 Consultant's Conclusions

The revenue requirement developed above has indicated the need for annual revenue increases to adequately fund the District's operating and capital needs for the water utility. The proposed rate revenue adjustments are 1.7% in FY 2018/19 and 1.8% from FY 2020/21 through 2021/22 and 1.9% in FY 2022/23. All revenue adjustments are assumed to be effective the beginning of each fiscal year (July 16st). HDR has reached this conclusion for the following reasons:

- Revenue adjustments are necessary to meet the operating and capital costs of providing water service to the District's customers.
- Revenue adjustments are necessary to reflect the reduction in annual water consumption due to the recent drought and State mandated conservation targets.
    - This new level of consumption is reflective of the new level of water consumption for the foreseeable future.
- The proposed revenue adjustments enhance the District's financial health and provide long-term sustainable funding levels.
- Prior to the end of the financial planning projected period, the District should complete a review of the water revenue levels and costs at that time.

In reaching this conclusion, HDR would recommend that the District adopt the proposed rate revenue adjustments for FY 2018/19 through FY 2022/23 in order to provide the funding for the operating expenses, capital improvement program, and maintain sufficient reserve levels.

4. Development of the Cost of Service Analysis

4.1 Introduction

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the District's water utility. This section will provide an overview of the cost of service analysis developed for the District.

A cost of service analysis determines the equitable allocation of the total revenue requirement proportionally between the various customer classes of service (e.g., residential, non-residential and irrigation/other). The previously developed revenue requirement was utilized in the development of the cost of service analysis.

4.2 Objectives of a Cost of Service Study

There are two primary objectives in conducting a cost of service analysis:

- Equitably allocate the District's revenue requirement among the customer classes of service; and
- Derive average unit costs (i.e., cost-based rates) for subsequent rate designs.

The objectives of the cost of service analysis are different from determining a revenue requirement. As noted in the previous section, a revenue requirement analysis determines the District's overall financial needs, while the cost of service analysis determines the equitable and proportional manner to collect the revenue requirement from each customer class of service.

The results of the cost of service analysis determine the unit costs, for each customer class, which are used in the development of the final proposed rate designs. The cost of service analysis provides per unit cost of water consumption based on each customer class's equitable (proportional) share of costs. For example, a water utility incurs costs primarily related to average day, peak day, and customer-related cost components. A water utility must build sufficient capacity[2] to meet peak capacity events. Therefore, those customers contributing to those peak demands on the system should pay their proportional share of the costs to provide the capacity in the system. The unit costs provide the relationship between these components which are then used to set cost-based rates.

[2] System capacity is the system's ability to supply water to all delivery points at the time when demanded. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital assets related costs incurred to accommodate the peak demands are generally allocated to each customer class based upon the class's contribution to the peak month, day or hour event.

4.3 Determining the Customer Classes of Service

The first step in a cost of service analysis is to determine the customer classes of service. As part of the cost of service analysis, the customer characteristics (monthly consumption patterns) were reviewed. Based on the review, customer classes of service were established that reflect like customers, in both a customer type and customer use characteristics (e.g., peaking factors). Based on this review, the following customer classes of service were used to develop the cost of service analysis:

- Residential
- Non-Residential
- Irrigation/Other

In determining classes of service for cost of service purposes, the objective is to group customers together into similar or homogeneous groups based upon similar facility requirements and/or demand characteristics. Currently, the District has one rate structure for all customer classes (i.e., residential, non-residential, and Irrigation/other). The proposed customer classes of service reflect the consumption patterns of each customer type. For example, residential customers have a different peaking factor and consumption use characteristics than the non-residential customers. This is a key aspect of the cost of service analysis that allows for the appropriate and equitable (proportional) allocation of costs to establish the proposed rates for each customer class of service.

For example, a residential customer class and rate schedule was developed based on the consumption patterns of residential customers who typically peak in the summer based on outdoor watering needs. It should also be noted that the consumption patterns of residential customers is similar from customer to customer. The non-residential customer class is for those customers that are not residential or irrigation/other. These are primarily businesses (restaurants, offices, grocery stores, etc.) and consumption levels can also vary greatly depending on the end use of water. However, the non-residential customers do not peak at the same level as residential customers. These customers were separated and a specific rate structure developed based

Terminology of a Water Cost of Service Analysis

Functionalization – The arrangement of the cost data by functional category (e.g. Distribution, pumping, treatment).

Classification – The assignment of functionalized costs to cost components (e.g. Consumption, Peak demand, and customer related).

Allocation – Allocating the classified costs to each class of service based upon each class's proportional contribution to that specific cost component.

Consumption Costs – Costs that are classified as volume related vary with the total consumption of water (e.g., power for pumping).

Capacity Related Costs – Costs classified Capacity related refer to the peak demand on the system. Different types of customers may have high water peak demand characteristics and high demand system components are a significant cost to the water system. Treatment facilities are often designed and sized around meeting these costs.

Customer-Related Costs – Costs classified as customer related vary with the number of customers on the system, e.g., billing costs.

Fire Protection-Related Costs – Costs classified as fire protection related vary with different fire protection requirements of the different customer classes.

Direct Assignment – Costs that can be clearly identified as belonging to a specific customer group or group of customers.

on the costs related to provide service. Based on these customer classes of service, each with their own unique customer consumption patterns and characteristics, the cost of service can be developed.

4.4 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the District's system, a cost of service analysis is conducted. A cost of service analysis utilizes a three-step approach to review costs. These steps take the form of functionalization, allocation, and distribution. Provided below is a detailed discussion of the water cost of service study conducted for the District, and the specific steps taken within the analysis. The approach used for this study conforms to generally accepted cost of service methodologies as outlined in the AWWA M1 manual.

4.4.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (e.g., water treatment, distribution system, pumping equipment) data by major operating functions (e.g., supply, transmission, storage, distribution, etc.). Within this study, there was a limited amount of functionalization of the cost data since it was largely accomplished within the District's system of accounts.

4.4.2 Allocation of Costs

The second analytical task performed in a water cost of service study is the allocation of the costs. The allocation of costs examines why the expenses were incurred or what type of need is being met. The following cost allocators were used to develop the cost of service analysis:

- **Commodity Related Costs:** Commodity costs are those costs which tend to vary with the total quantity of water consumed by a customer class. Commodity costs are those incurred under average load (demand) conditions and are generally specified for a period of time such as a month or year. Chemicals or utilities (electricity) are examples of commodity-related cost as these costs tend to vary based upon the total demand of water. For the proposed tiered rate structure for residential, the commodity costs are allocated for each tier based on the total consumption billed in each tier based on the proposed tier sizes. These costs were also allocated to non-residential for all consumption.

- **Capacity Related Costs:** Capacity costs are those which vary with peak demand, or the maximum rates of flow to customers. System capacity is required when there are large demands for water placed upon the system (e.g., summer lawn watering). For water utilities, capacity related costs are generally related to the sizing of facilities needed to meet a customer's maximum water demand at any point in time. For example, portions of distribution storage tanks, pumps, and mains (pipes) must be adequately sized to meet for this particular type of requirement. Similar to the commodity related costs, capacity related costs are allocated for each tier based on the peaking factor for those customers in each tier to reflect the costs associated with higher consumption in each tier. Capacity costs were split

between supply capacity, related to providing peak event consumption, and distribution capacity, related to individual peak demands.

- **Customer Related Costs:** Customer costs are those costs which vary with the number of customers on the water system. They do not vary with system output or consumption levels. These costs are also sometimes referred to as readiness to serve or availability costs. Customer costs may also sometimes be further classified as either actual or weighted. Actual customer costs vary proportionally, from customer to customer, with the addition or deletion of a customer regardless of the size of the customer. An example of an actual customer cost is postage for mailing bills. This cost does not vary from customer to customer, regardless of the size or consumption characteristics of the customer. In contrast, a weighted customer cost reflects a disproportionate cost, from customer to customer, with the addition or deletion of a customer. Examples of weighted customer costs are items such as meter maintenance expenses, where a large non-residential customer requires a significantly more expensive meter than a typical residential customer.

- **Fire Protection Related Costs:** Fire protection costs are those costs related to the public fire protection functions. Usually, such costs are those related to public fire hydrants and the over-sizing of mains and distribution storage tanks for fire protection purposes.

- **Revenue Related Costs:** Some costs associated with the utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be the cost of processing credit cards which would be proportional to gross utility revenue.

4.5 Development of the Distribution Factors

Once the allocation process is complete, and the customer groups have been defined, the various allocated costs were distributed to each customer group. The District's allocated costs were allocated to the previously identified customer groups using the following distribution factors; see Exhibit 4 in the Technical Appendix.

- **Commodity Distribution Factor:** As noted earlier, commodity-related costs vary with the total water consumption. Therefore, the commodity distribution factor was based on the projected total metered consumption plus losses for each class of service and tier for the projected test period. As noted, the consumption reflects the projected new baseline consumption levels. These projected levels are based on estimates of customer behavior changing due to customers' response to the recent drought (circa 2012 - 2016). A distribution factor was developed for non-residential, irrigation/other and the residential tiers to reflect the consumption for each customer class.

- **Capacity Distribution Factor:** The capacity distribution factor was developed based on the assumed contribution to peak day use of each class. Peak day use by customer class of service and tier was developed using peaking factors for each customer group and tier. In this particular case, the peaking factor was defined as the relationship between peak day contribution and average day use and determined for each customer group based on a review of the average month to peak month usage. Given an estimated peaking factor, the peak day

contribution for each class of service was developed. The peak factors were developed for non-residential, irrigation/other and the tier of the proposed residential tier which reflects the increased peaking factor for those customers using higher levels of consumption.

Capacity costs were split into two categories: supply capacity and distribution capacity. Supply capacity is related to the customer class's peak use. Therefore, coincident peak day demand is used to allocate water supply related costs. Distribution capacity costs were allocated based on the capacity requirements of each customer class. The overall system capacity is designed based on the sum total of demands placed on it by each individual customer meter. Therefore non-coincident peak day demand was used to allocate costs incurred as a result of the capacity requirements of the water mains and storage tanks.

- **Customer Distribution Factor:** Customer costs vary with the number of customers on the system. Two basic types of customer distribution factors were identified – actual and weighted. The distribution factor for actual customers was based on the projection of the number of customers developed within the revenue requirement. The weighted customer distribution factors is also broken down further into two factors which attempt to reflect the disproportionate costs associated with serving different types of customers. The first weighted customer factor is for customer service and accounting. This weighted customer allocation factor takes into account the fact that it may take more time to read a meter and process a bill for various customers. The second weighted customer distribution factor is for meters and services. This factor attempts to reflect the different costs and capacity demands associated with providing larger sized meters. For example, there is a significant difference in the demands a 5/8" meter places on the system when compared to the demands a 2" meter can place on the system. This difference is reflected within the allocation factor.
- **Fire Protection Distribution Factor:** The development of the distribution factor for public fire protection expenses involved an analysis of each class of service and their fire flow requirements. The analysis took into account the gallon per minute fire flow requirements in the event of a fire, along with the duration of the required flow. The fire flow rates used within the distribution factor were based on industry standards and similar experiences with other water cost of service studies. The minimum fire flow requirements are then multiplied by the number of customers in each class of service, and the assumed duration of the fire, to determine the class' prorated fire flow requirements.
- **Revenue Related Distribution Factor:** The revenue related distribution factor was developed from the projected rate revenues for FY 2018/19 for each customer class of service.

As mentioned before, in a typical cost of service study, the distribution factors represent a group of similar customers such as residential, non-residential and irrigation/other customers. However, to meet the intent of Proposition 218, additional cost detail was needed when allocating costs. To reflect this, and as noted above, the commodity and capacity distribution factors were developed by customer class and by tier to develop the cost basis for the proposed rates (i.e., unit costs).

4.6 Functionalization and Allocation of Plant in Service

As noted, one of the first steps of the cost of service is the functionalization and allocation of plant in service. In performing the functionalization of plant in service, HDR utilized the District's historical plant (asset) records. Once the plant assets were functionalized, the analysis shifted to the allocation of the asset. The allocation process included reviewing each group of assets and determining which cost allocator the assets were related to. For example, the District assets were allocated as: commodity-related, capacity-related, customer-related, revenue-related, fire protection-related, or a direct assignment. Provided below is a summary of the allocation process. The following approach is based on the methodology as described in the AWWA M1 Manual.

Source of supply – Source of supply was allocated as average and peak day related. Based on the operation of the system, the source of supply assets were allocated 68.6% to commodity and 31.4% to capacity-supply. This classification reflects the District's system peak demand (capacity needs) in relation to the system average day use (base needs) as source of supply assets provide both average day and peak day service.

Treatment – Treatment was classified the same as supply; 68.6% to commodity and 31.4% to capacity-supply. This reflects the purpose of the treatment facilities, to meet both average day and peak day needs of the system.

Pumping Equipment – Pumping equipment typically designed to meet at least two types of needs –peak use demands and fire protection. This resulted in 99.4% of the storage costs being assigned to capacity-distribution and the remaining 0.6% to be assigned to the fire protection component.

Transmission & Distribution – Transmission and distribution lines (mains) are typically assumed to provide three types of costs. First, a distribution system must be in place to meet a customer's minimum use requirements for water. This portion of the distribution main plant investment is considered to be a customer related cost, or a function of the number of customers on the system. Next, a portion of the distribution system mains is considered a function of meeting peak flow requirements on the system. Distribution mains must be sized to adequately meet the maximum (peak) flows demanded by customers. This portion of the distribution main plant investment is considered capacity related. Finally, distribution mains must also be over-sized for public fire flow demands. This final portion of over-sizing for distribution plant investment is classified as fire protection-related. Based upon an analysis of the District's distribution main size and lengths, a minimum system analysis was completed to develop the assignment of the distribution mains as 48.8% customer - weighted by meters and service, 48.1% capacity-distribution related, and 2.7% fire protection related.

Table 4 - 1 provides a summary of the basic functionalization and allocation of the major water plant items. A more detailed exhibit of the functionalization and allocation of Districts water plant (assets) can be found in the Technical Appendix in Exhibit 5.

Table 4-1 Summary of the Classification of Water Utility Plant in Service							
Plant Component	Commodity	Capacity	Customer			Fire Protection	Direct Assignment
			Actual	Weighted	Weighted Meter & Services		
Source of Supply	68.6%	31.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Water Treatment	68.6%	31.4%	0.0%	0.0%	0.0%	0.0%	0.0%
Transmission/Distribution	0.4%	48.1%	0.0%	0.0%	48.8%	2.7%	0.0%
Pumping Equipment	0.0%	99.4%	0.0%	0.0%	0.0%	0.6%	0.0%
Plant Before General	30.6%	43.4%	0.0%	0.0%	24.5%	1.4%	0.0%

4.7 Functionalization and Allocation of Operating Expenses

As noted in the AWWA M1 Manual, operating expenses are generally functionalized and allocated in a manner similar to the corresponding plant account. For example, maintenance of distribution mains is typically allocated in the same manner (allocation percentages) as the plant account for distribution mains. This approach to allocating the District's operating expenses was used for this analysis. Although in general, the District does separate O&M expenses by function (e.g., supply, distribution), however, not all of the O&M is functionalized which is not uncommon for utilities. As a result, the approach to allocate the operating expenses was based on the classification of the plant, or asset data, which reflects the investment made by the District to provide service.

For the study, the revenue requirement for FY 2018/19 was functionalized and allocated based on the approach noted above. As noted earlier, the District utilized a cash basis revenue requirement, which was comprised of operation and maintenance expenses, rate funded capital, debt service, and reserve funding. Provided in Table 4 - 2 is a summary of the allocation of the water revenue requirement to the cost classifiers.

Table 4 – 2 Summary of the Classification of the Water Revenue Requirement ($000)							
	Total	Commodity	Capacity	Customer	Revenue Related	Fire Protection	Direct Assignment
Net Revenue Requirement	$11,271	$808	$1,092	$9,301	$33	$36	$0

4.8 Major Assumptions of the Cost of Service Study

A number of key assumptions were used within the District's cost of service study. Below is a brief discussion of the major assumptions used.

- A test period is used for the cost of service analysis in order to select the expenses which should be allocated. The revenue and expense data was previously developed within the revenue requirement study for FY 2018/19.
- A cash basis approach was utilized which conforms to generally accepted water cost of

service approaches and methodologies.

- The allocation of plant in service was developed based upon generally accepted cost allocation techniques (i.e., AWWA M1 Manual). Furthermore, they were developed using the District's specific system data and customer information.
- Consumption by tier and class of service used within this study was developed for each class of service from historical usage information provided by the District.
- Peak day capacity allocation factors were developed based upon each customer group's, and tier where applicable, average to peak month relationship.

4.9 Summary Results of the Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the District's revenue requirement. The functionalized revenue requirement was then allocated into the various cost components. The individual allocation totals were then distributed to the various customer classes of service and tiers based on the appropriate distribution factor. For example, commodity related costs were allocated based on the commodity allocation factor which was based on annual water consumption. Each customer class is allocated their proportional share of commodity costs based on total annual water consumption by tier. Similarly, capacity costs were allocated proportionally based on the capacity allocation factor. This factor reflects the peaking characteristics of each class, and tier. In this way, each class, and tier, is allocated the proportional share of costs allocated to the capacity component.

The distributed expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Shown below in Table 4 – 3 is a summary of the distributed costs to each customer class of service.

Table 4 – 3
Summary of the Allocation of the Water Revenue Requirement ($000)

Cost Classifier	Total Costs	Residential	Non-Residential	Irrigation/Other
Commodity	$808	$683	$77	$48
Capacity	1,092	845	135	112
Actual Customer	9,301	8,693	531	77
Public Fire Protection	33	32	2	0
Revenue Related	36	33	2	1
Direct Assignment	0	0	0	0
Total	**$11,271**	**$10,286**	**$748**	**$237**

The cost of service study equitably allocates the operating and capital costs to each customer class with their respective benefit received from and burdens placed on the water system (proportional allocation).

It is important to understand that a cost of service analysis is based on one year's O&M expense data and projected customer usage information. Given this, the results of the cost of service analysis may change from year to year. As the District continues to monitor rates and cost of service results through future studies, future cost of service adjustments may be necessary to reflect costs and customer consumption patterns at that time. While the cost allocation is important to the overall rate setting process, the basis for the proposed rates is the unit costs. The unit costs are the allocated costs, by cost component, divided by the appropriate consumption unit. For example, commodity related costs are divided by the total consumption by customer and tier. Provided in Table 4-4 is a summary of the cost of service unit costs.

Table 4 - 4
Summary of the Unit Costs

	Commodity Costs ($/CCF)	Capacity Costs ($/CCF)	Direct Assignment Costs ($/CCF)	Total Unit Cost ($/CCF)	Differential ($/CCF)
Residential					
Tier 1	$0.53	$0.56	$0.00	$1.09	N/A
Tier 2	0.53	0.60	0.00	1.14	0.05
Tier 3	0.53	1.03	0.00	1.56	0.42
Tier 4	0.53	1.23	0.00	1.77	0.21
Non-Residential	0.53	0.93	0.00	1.47	N/A
Irrigation/Other	0.53	1.25	0.00	1.78	N/A

A more detailed analysis of the development of the above unit costs is provided in Section 5 of this report.

4.10 Consultant's Conclusions and Recommendations

Given the requirements of Article XIII D, section 6 the results of the cost of service will be used to establish the proposed rate designs for each of the District's customer classes of service. A more detailed discussion of the use of the cost of service results, and unit costs, is provided in the rate design section (Section 5) of this report.

4.11 Summary of the Cost of Service Analysis

This section of the report has provided the recommendations resulting from the cost of service analysis developed for the District's water utility. This analysis was prepared using generally accepted cost of service techniques as provided in the AWWA M1 Manual. The following section of the report will provide a summary of the present and proposed rates for the District's water utility.

5. Development of the Rate Designs

5.1 Introduction

The final step of the District's water rate study is the design of rates to collect the necessary levels of revenues, based on the results of the revenue requirement and cost of service analyses. In reviewing current rates, consideration is given to the level of the rates as well as the structure of the rates. The level of rates reflects the amount of revenues that should be collected while the structure of the rates is how it is collected (charged) from the customers.

The overall revenue level for the District has been established in the revenue requirement analysis (Section 3) while the equitable allocation of costs and subsequent unit costs for the various customer classes has been developed in the cost of service analysis (Section 4) which provides the revenue levels to be collected from each class of service.

5.2 Rate Design Criteria and Considerations

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the District to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage efficient use, economic development, etc.)
- Provide revenue stability from month to month and year to year
- Promote efficient allocation of the resource
- Equitable and non-discriminatory (cost-based)
- Legally Defensible

It is important that the District provide its customers with a proper price signal as to what their consumption and peaking (demand) requirements are costing. This goal may be approached through rate level and structure. When developing the proposed rate designs, all the above listed criteria were taken into consideration. However, it should be noted that it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into consideration the customer's ability to pay, and one which is cost-based. In designing rates, there are always trade-offs between these various goals and objectives.

5.3 Development of Cost-Based Water Rates

Developing cost-based and equitable rates is of paramount importance in developing proposed water rates. While always a key consideration in developing rates, meeting the legal requirements, and documenting the steps taken to meet the requirements, has been in the forefront with the recent legal challenges in the State of California on water rates. Given this, the District's proposed water rates have been developed to meet the legal requirements of California constitution article XIII D, section 6 (Article XIII D). A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally allocated among the various customer classes of service. HDR would point out that there is no single prescribed methodology for equitably assigning costs to the various customer groups. The American Water Works Association (AWWA) M1 Manual clearly delineates various methodologies which may be used to establish cost-based rates. Article XIII D does not prescribe a particular methodology for establishing cost-based rates; consequently, HDR developed the District's proposed water rates based on the methodologies provided in the AWWA M1 Manual to meet the requirements of Article XIII D and recent legal decisions to provide an administrative record of the steps taken to establish the District's water rates.

HDR is of the opinion that the proposed rates comply with legal requirements of Article XIII D. HDR reaches this conclusion based upon the following:

- The revenue derived from water rates does not exceed the funds required to provide the property related service (i.e., water service). The proposed rates are designed to collect the overall revenue requirements of the District's water utility.
- The revenues derived from water rates shall not be used for any purpose other than that for which the fee or charge is imposed. The revenues derived from the District's water rates are used exclusively to operate and maintain the District's water system.
- The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel. This study has focused almost exclusively on the issue of proportional assignment of costs to customer classes of service. The proposed rates have appropriately grouped customers into customer classes of service, residential, non-residential and irrigation/other , that reflect the varying consumption patterns and system requirements of each customer class of service. The grouping of customers and rates into these classes of service creates the equity and fairness expected under Article XIII D by having differing rates by customer classes of service which reflect both the level of revenue to be collected by the utility, but also the manner in which these costs are incurred and equitably assigned to customer classes of service based upon their proportional impacts and burdens on District's the water system.

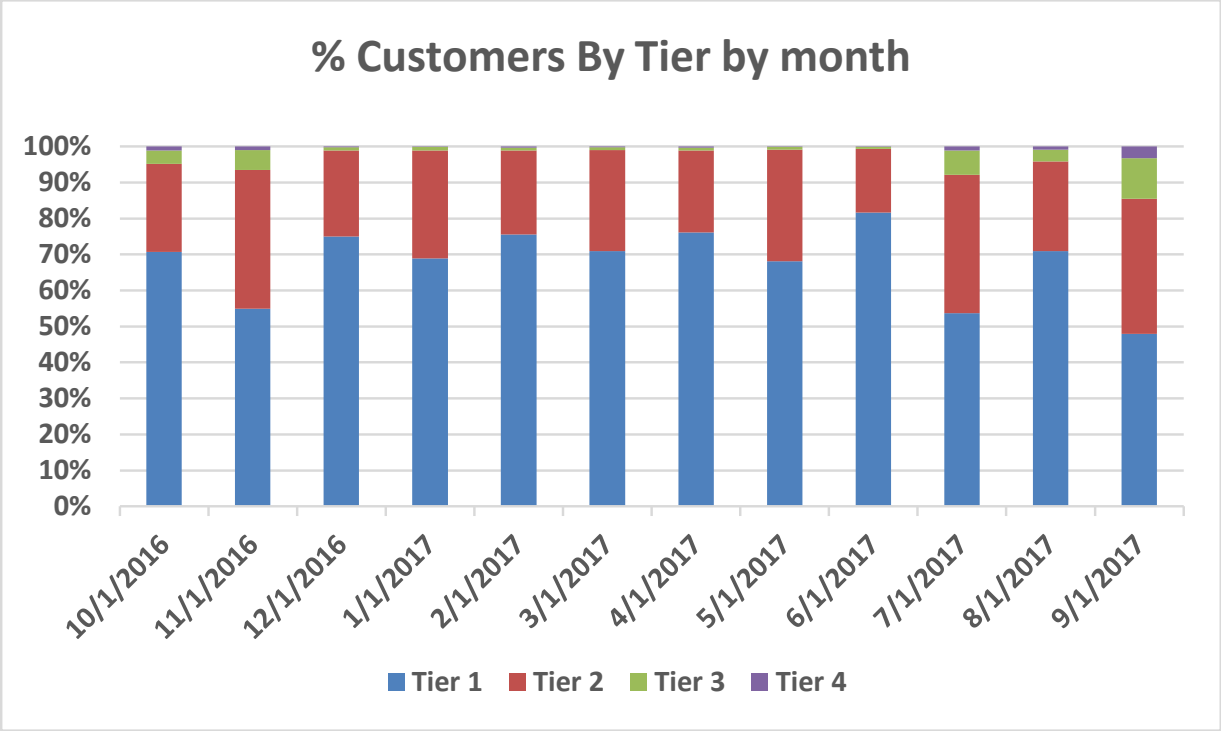
The District currently has a single rate structure for all of its customer classes of service. The rate includes a bi-monthly meter charge - which varies by meter size - and a 4-tiered usage charge on a dollar per hundred cubic Feet basis. The tier size vary based on meter size where the larger the meter a customer has the more usage is contained in each tier. The first tier of consumption currently is provided without additional charge along with the bi-monthly meter charge.

In discussion with the District, it was determined that strategic changes to the rate structure is a desired out come for the study. The most substantive change in the rate structure was by making individual rate for the different classes of service. It was determined that the residential rate would largely remain the same, with a bi-monthly meter charge and four tiers of consumption. What did change for residential customers was that the first tier is no longer included with the meter charge and also the tier size would be fixed regardless of meter size. For non-residential and Irrigation/other customer classes the consumption rate was changed to a uniformed rate meaning, one rate for all consumption, while the meter charge remains the same as the residential meter charge.

As a part of this study, HDR developed a water rate design discussion to clearly demonstrate and support the proposed water rates and tiered pricing for the residential customer class. The following discussion provides a more detailed analysis of the costing techniques and methodologies used to support the District's proposed rate design.

5.3.1 Determination of Sizing and Number of Tiers

The first step in reviewing the District's current, and proposed, tiered rate structure is to identify the number of tiers and determine the size of the tiers. After reviewing the customer consumption patterns, it was determined that the current tier size for a 5/8" meter reflect the consumption patterns of the customers. A summary of the percent of customers by tiers are shown in the graphic below. As can be seen, the rate structure appears to be working effectively by having the majority of customer in the first two blocks. Then, as the time period shifts into summer, more customers are in the 2 – 4 tiers which are designed around the peak summer customer needs. This is also impacted by the seasonal demographics of the District's customer base. With a high level of second homes and the impacts of both winter and summer activities,



the consumption patterns vary from a traditional utility in an urban area. Given this, the District's tiers have been developed to reflect the consumption patterns of the District's customers.

Given the variability of non-residential and Irrigation customers overall use and the diversity of customer's within the class, it is difficult to develop tiers which reflect the typical customer consumption habits like is done in residential as residential customers behave in a much more like manner. With this variability in possible water use it was decided that non-residential customers would have a single rate for all consumption. A more detailed discussion of the peaking factors by customer class is provided 5.4.2. After the number and size of tiers and the seasonal periods have been identified, the pricing of the tiers is the next analytical step.

5.3.2 Establishing the Cost-Basis for Pricing Tiers

Given past legal decisions regarding water rates, HDR has concluded that utilities have available to them at least three technical approaches to be able to demonstrate (i.e., cost justify) the individual pricing of the tiers. These technical approaches encompass the following areas:

1. Cost differences in water supply (i.e., stacking of water supply resources to tiers).
2. Cost differences from high peak use consumers (relationship of average use to peak use).
3. Direct assignment of costs to specific tiers (conservation program costs, etc.).

In certain cases, the cost differences may be related to the cost of water supply when a utility has more than one source of water supply. Additionally, this water supply approach may also include the cost of alternative water supplies (e.g., recycled or reuse water). For example, reuse water may be assigned to higher tiers to reflect outdoor use or the need for additional/alternative water supply to meet the demands of the high use customers.

The second possible source of cost differences for the pricing of tiers is related to high-peak use (peak demand) customers. Customers that use more water create greater demands and costs on the system. A water supply and distribution system must be sized to meet these peak use requirements. In other words, on the hottest day of the year when everyone is watering their lawn, the supply and distribution system must be sized to meet those peak use demands. Economic theory clearly states that equity is achieved when those that create the demand event, pay for the demand event. In this particular case, this has implications upon the equitable allocation of capacity-related costs to the different usage tiers (low use vs. high peak use).

Finally, certain costs may be directly assigned to specific tiers. For example, a conservation program which focuses on outdoor water use may be directly assigned to the water tiers, or seasons, which are most directly related to outdoor use. The direct assignment to a specific price tier will create a price differential for that tier.

For the District's study, the focus of the analysis was on the second method of determining the cost impacts and cost differences associated with peak use. The pricing of the tiers, or uniform rate, was developed to provide the cost-basis and meet the intent of Proposition 218.

5.4 Development of the Unit Costs for Rate Designs

To begin the assignment of costs related to specific tiers, the results of the cost of service analysis is utilized. As noted in Section 4, the cost of service analysis allocates the revenue requirement between the various cost components of average use (commodity), peak use (capacity), and customer (actual and weighted). However, the results provided in Table 4 - 2 which allocated the totals to the various customer classes of service are further allocated between the rate structure components (e.g., service charge, usage charge, tiers). Provided in Table 5 – 2 is a summary of the classification of the FY 2018/19 revenue requirement from the cost of service analysis (same as Table 4 - 2).

Table 5 – 2
Summary of the Classification of the Water Revenue Requirement ($000)

	Total	Commodity	Capacity	Customer	Revenue Related	Fire Protection	Direct Assignment
Net Revenue Requirement	$11,266	$808	$1,092	$9,297	$33	$36	$0

The total of the above allocated costs, of approximately $11.3 million, is the same as the total costs allocated in Table 4 - 2 of the cost of service analysis. This allocation of the total revenue requirement for FY 2018/19 is then distributed to the various customer classes of service. Prior to the recent legal decisions, the analyses would have been complete. However, given the legal requirement to provide the cost-basis for each rate, both fixed and variable pricing, the allocated costs are further distributed between the various rate structure components based on the corresponding distribution factors. The distribution factors were discussed for the costs of service in Section 4 of this report. For example, the commodity costs are divided through by each customer class's consumption from a given tier. Provided below is a discussion of the approach used to allocate the revenue requirement between the various customer classes of service as established in Sections 3 and 4 to the various rate components for each customer class of service.

5.4.1 Commodity Allocation Factor

The commodity allocation factor is based on the average annual use for each of the customer classes of service, and more importantly by tier. For the development of the pricing of the proposed rates the following customer class components were used:

- Residential
  - Tier 1
  - Tier 2
  - Tier 3
  - Tier 4
- Non-Residential
- Irrigation/Other

To develop the commodity allocation factor for each customer class, the usage for each class, and tier, was divided by the total usage of the system. This produces the percent of the system that each class is responsible for and, therefore, their contribution to commodity related costs. Provided below in Table 5 – 3 is a summary of the commodity allocation factor.

Table 5 - 3
Summary of the Commodity Allocation Factor

Reference Calculation	*A*	*B*	*C* C = A + B	*D*
	FY 2017-18 Consumption (CCF)	**Est. System Losses (CCF)**	**Total Annual Use (CCF)**	**% of Total**
Residential				
Tier 1	$491,706	$73,756	$565,462	32.52%
Tier 2	587,077	88,062	675,139	38.83%
Tier 3	132,884	19,933	152,817	8.79%
Tier 4	65,681	9,852	75,533	4.34%
Residential Total	$1,277,349	$191,602	$1,468,951	84.49%
Non-Residential	$144,927	$21,739	$166,666	9.59%
Irrigation/Other	89,563	13,434	102,997	5.92%
Total	$1,511,838	$226,776	$1,738,614	100.00%

As can be seen, the development of the commodity distribution factor is fairly straightforward. It is important to note that the distribution factor is based on the actual metered consumption each class and tier, plus assumed losses on the system. In this way, those costs allocated to the commodity component can be proportionally allocated to the appropriate customer class and customer class tier. As an example, Tier 1 consumption of the residential class of service represents 32.52% of the total consumption on the system. As a result, 32.5% of the commodity related costs are then allocated to Tier 1 of the residential customers.

This approach is used for each of the customer classes of service for each rate component and tier. Using the costs allocated to the commodity component in the cost of service analysis from Table 5 - 2, and the commodity distribution factor in Table 5 - 3, the distribution of costs to each tier or customer class can be developed. The summary of the distributed commodity costs are shown below in Table 5 – 4.

Table 5 - 4 Allocated Commodity Costs ($000s)				
Reference Calculation	*A*	*B*	*C*	*D* D = B / C
	% of Total	Commodity Costs	Water Sales (CCF)	Unit Cost ($/CCF) [1]
Residential				
Tier 1	32.52%	$263	$491,706	$0.53
Tier 2	38.83%	314	587,077	0.53
Tier 3	8.79%	71	132,884	0.53
Tier 4	4.34%	35	65,681	0.53
Residential Total	84.49%	$683	$1,277,349	$0.53
Non-Residential	9.59%	$77	$144,927	$0.53
Irrigation/Other	5.92%	48	89,563	0.53
Total	100.00%	$808	$1,511,838	$0.53

The figures in column A are from column D in Table 5 – 3. The costs shown in column B are based on the total commodity related costs from column A of Table 5 – 2. Column C is from column A in Table 5 – 3, or the actual consumption that is billed to the customers.

From the unit costs developed in Table 5 – 4 above, the per unit cost basis of the tiered and uniform rates can be determined for the commodity related costs identified in the cost of service analysis (Column D). For example, for the proposed residential tier 1 rate, the commodity component is $0.53 per CCF. This applies to each tier and customer class (e.g., residential, non-residential and Irrigation/other).

5.4.2 Capacity-Supply Allocation Factor

As was mentioned in the development of the allocation and distribution for the cost of service analysis, the capacity costs were split between capacity-supply and capacity-distribution. The capacity-distribution costs we added to the fixed service charge whereas the capacity-supply costs are included in the costs developed for the usage charge calculation and are developed herein. The capacity-supply allocation factor utilizes the same customer classes, and tiers, as has been established for the cost of service study. Whereas commodity costs are related to the volume of water used by each class of service by tier or season, the capacity supply costs are related to how the class uses that water in each tier or annually. Customers use water in different ways and at different times, thus creating different usage patterns and resulting in different peaking factors. These usage patterns drive how the District must size the system to meet the peak demands of customers. To determine the allocation by tier or annually, peaking factors need to be developed for each customer class of service tier or season. The peaking factors for each class of service must be estimated due to a lack of specific metered data related to peak day usage by each class of service. One method discussed in the AWWA M1 Manual used to estimate

a class's peaking factor is to review the average monthly volume of water consumed and compare it to the maximum monthly usage of water. By dividing the maximum month by the average month, a peak-day factor is calculated. Essentially, this factor provides a seasonal surrogate for the difference between the average use and peak day use in each tier or season. For example, if a customer used 10 CCF per month on average and in the peak month 15 CCF was used, the peaking factor would be 1.50 (15 / 10 = 1.50). In this example, the peaking factor is stating that the maximum usage in a month is 1.50 time higher than the average usage per month.

For the District's study the consumption patterns of each customer class and tier were reviewed and peaking factors were developed for each tier. In other words, a peak factor for each customer, by tier was developed to depending on the amount of water used and the peak demands of those customers within that tier compared to the average customer consumption peak. Shown below in Table 5 – 5 is a summary of the capacity-supply allocation factor for each customer class.

Table 5 - 5
Summary of the Capacity-Supply Allocation Factor

Reference Calculation	*A*	*B*	*C* C = A * B	*D*
	Average Consumption (MGD)	**Peaking Factors**	**Peak Day Use (MGD)**	**% of Total**
Residential				
Tier 1	1.16	1.12	1.30	25.03%
Tier 2	1.38	1.22	1.69	32.50%
Tier 3	0.31	2.07	0.65	12.47%
Tier 4	0.15	2.48	0.38	7.40%
Residential Total	3.01	1.34	4.02	77.40%
Non-Residential	0.34	1.88	0.64	12.36%
Irrigation/Other	0.21	2.52	0.53	10.24%
Total	3.56	1.46	5.20	100.00%

Table 5 – 5 above shows the development of the capacity-supply distribution factor. For example, based on the District's residential customer consumption data, those customers that stayed within tier 1 have a peak factor of 1.12. In other words, those customers that stay within tier 1 use 1.12 times more water in the peak period than on average. This is compared to customers in the remaining tiers which show a higher peaking factor based on how the customers in these tiers consume water. These peaking factors were developed around the District's specific customers consumption patterns. Similar to the distribution of commodity costs to the tiers or customer classes, the capacity-supply related costs are distributed in the same manner. For example, 25.03% of the capacity-supply costs are allocated to Tier 1 of the residential customers based on column D in Table 5 - 5. To determine this, the average day use (column A) of each tier

or class is multiplied by the peaking factor (column B). The total peak use by tier or class is divided by the system total peak use to develop the proportional distribution.

Table 5 – 6 provides a summary of the distributed capacity-supply costs to each tier and season.

Table 5 - 6
Allocated Capacity-Supply Costs ($000s)

Reference Calculation	*A*	*B*	*C*	*D* D = B / C
	% of Total	Capacity Costs	Water Sales (CCF)	Unit Cost ($/CCF)
Residential				
Tier 1	25.03%	$273	491,706	$0.56
Tier 2	32.50%	355	587,077	0.60
Tier 3	12.47%	136	132,884	1.03
Tier 4	7.40%	81	65,681	1.23
Residential Total	**77.40%**	**$845**	**$1,277,349**	**$0.66**
Non-Residential	**12.36%**	**135**	**144,927**	**0.93**
Irrigation/Other	**10.24%**	**112**	**89,563**	**1.25**
Total	**100.00%**	**$1,092**	**1,511,838**	**$0.72**

* Tier 1 costs are added to the fixed service charge component and are not included in the usage charges

The figures in column A are from column D in Table 5 – 5. The costs shown in column B are based on the total capacity related costs from column B of Table 5 – 2. Column C is from column A in Table 5 – 3. For example, the proposed rate for Tier 2 includes a capacity component cost of $0.60 per CCF while the Tier 4 capacity cost is $1.23 per CCF. This difference reflects the costs associated with providing consumption at higher tiers and the costs of providing that capacity.

5.4.3 Summary of the Consumption Based Unit Costs

Combining the unit costs from the commodity and capacity-supply unit costs result in the basis of the tiered rate pricing. It is important to note that there could be additional costs classified as direct assignment related costs. The direct assignment cost, for example, could be related to conservation and could then be assigned to specific tiers for residential, non-residential and/or irrigation/other customers.

The summary Table 5 – 7 below shows the summation of the costs for each tier / rate. This table sums the costs from Table 5 – 4 column D and Table 5 – 6 column D.

Table 5 - 7 Summary of the Unit Costs for Rate Design					
Reference	*A*	*B*	*C*	*D*	*E*
	Commodity Costs ($/CCF)	**Capacity Costs ($/CCF)**	**Direct Assignment Costs ($/CCF)**	**Total Unit Cost ($/CCF)**	**Differential ($/CCF)**
Residential					
Tier 1	$0.53	$0.56	$0.00	$1.09	*NA*
Tier 2	0.53	0.60	0.00	1.14	*$0.05*
Tier 3	0.53	1.03	0.00	1.56	*$0.42*
Tier 4	0.53	1.23	0.00	1.77	*$0.21*
Residential Total	**0.53**	**0.66**	**0.00**	**1.20**	
Non-Residential	**0.53**	**0.93**	**0.00**	**1.47**	*NA*
Irrigation/Other	**0.53**	**1.25**	**0.00**	**1.78**	*NA*

* Tier 1 costs are added to the fixed service charge component and are not included in the usage charges

The results shown in Table 5 – 7 above are the basis for the District's consumption pricing for the proposed rates. The analysis and costs shown above have been developed to meet the intent of Proposition 218 and recent legal decisions related to developing cost-based water rates.

5.4.4 Summary of the Customer (Fixed) Costs

It is also important to note that the customer related costs as well as the Tier 1 consumption costs and the capacity-distribution costs are used to establish the monthly service charge which varies by meter size. As a result, the total customer costs were divided by the number of equivalent meters on the system. An equivalent meter uses the capacity ratio of a 5/8-inch meter to the larger meter sizes to determine the pricing for each meter size. In this way the meter charge reflects the equitable proportion of fixed costs on the system based on the capacity demands the customer can place on the system based on the size of the meter. Shown below in Table 5 – 8 is a summary of the customer related costs and customer charge development.

Table 5 - 8 Summary of the Customer Charge for Rate Design				
	Current District Ratios	**Residential Cost** *($ / Acct. / Mo)*	**Non-Residential Cost** *($ / Acct. / Mo)*	**Irrigation/Other Cost** *($ / Acct. / Mo*
Total Customer Costs				
Total 5/8" Meter Equiv. *[1]*		13,000	795	115
Cost per Equiv. Meter		**$112.28**	**$112.24**	**$112.57**
Proposed Rates				
5/8"	1.0	$112.28	$112.24	$112.57
3/4"	1.5	168.43	168.37	168.86
1"	2.5	280.71	280.61	281.43
1.5"	5.0	561.42	561.22	562.86
2"	8.0	898.27	897.95	900.58
3"	16.0	1,796.54	1,795.90	1,801.16
4"	25.0	2,807.09	2,806.09	2,814.31

[1] – Based on the current District equivalent meter ratios

5.5 Summary of the Present and Proposed Water Rates

Given the development of the unit costs for rate design purposes, the next step is to develop the proposed rates for the next five year period. As a note, the proposed rates are being developed for the test year FY 2018/19 based on the unit costs as discussed in the previous section of this report based on generally accepted cost of service principles. Provided in the following is a summary of the present and proposed rates for each customer class of service for each year of the review period.

As noted, the rate structure has changed creating individual rates for each customer class. It is important to note that the bi-monthly fixed meter charge for residential, non-residential and irrigation/other will remain the same for each meter size, but the consumption charges will be different for each customer class. The proposed rates reflect the results of the revenue requirement and cost of service analysis. Provided below in Table 5 - 9 is a summary of the current and proposed rates for the District's customers. As noted, the proposed rates in are based on the previously discussed unit costs.

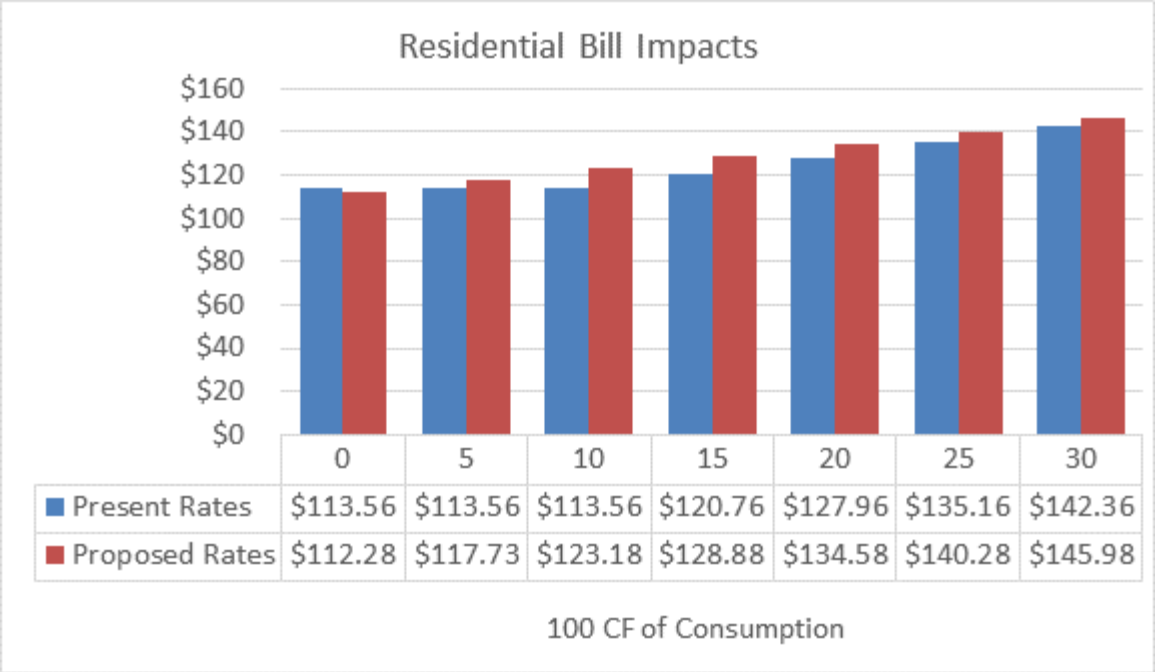
Table 5-9
Current and Proposed Rates

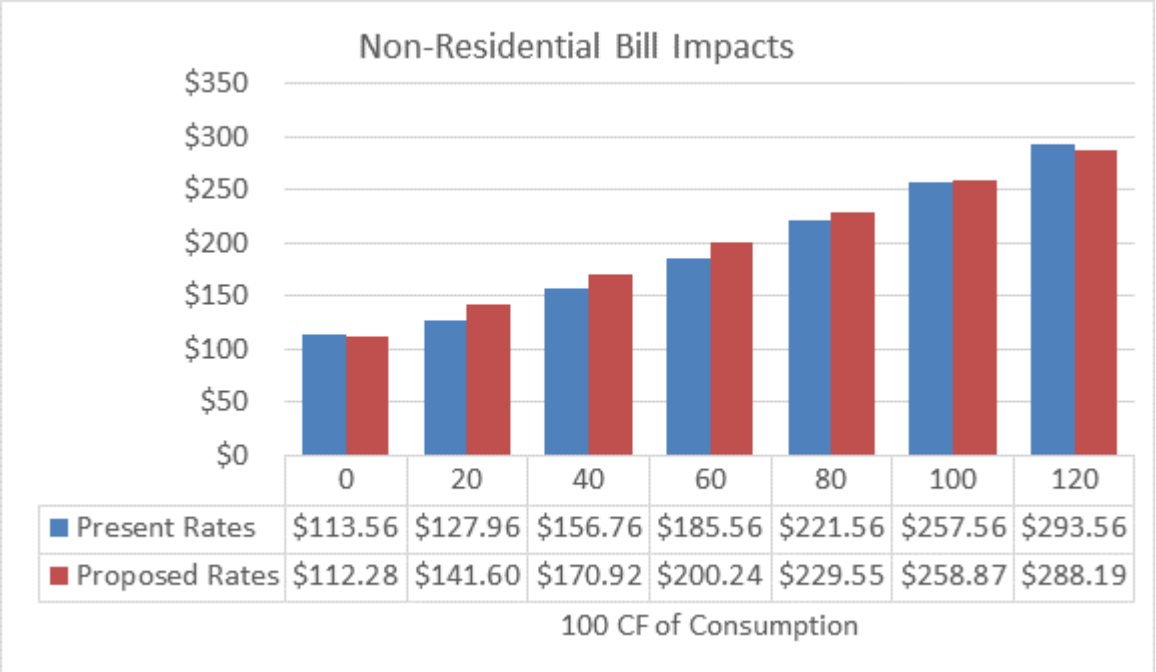
	Present Rates	2018-19	2019-20	2020-21	2021-22	2022-23
Service Charge (Bi-Monthly)						
5/8"	$113.56	$112.28	$113.68	$115.10	$116.54	$118.10
3/4"	170.34	168.42	170.52	172.66	174.84	177.18
1"	283.90	280.70	284.20	287.76	291.38	295.28
1.5"	567.82	561.42	568.42	575.54	582.78	590.56
2"	908.50	898.26	909.46	920.86	932.46	944.92
3"	1,817.00	1,796.52	1,818.90	1,841.68	1,864.88	1,889.80
4"	2,839.06	2,807.06	2,842.04	2,877.64	2,913.88	2,952.82
Commodity Charge ($/100 CF)						
Tier 1, (0 - 1,000 CF) [1]	$0.00	NA	NA	NA	NA	NA
Tier 2, (1,001 - 6,000 CF) [1]	1.44	NA	NA	NA	NA	NA
Tier 3, (6,001 - 12,000 CF) [1]	1.80	NA	NA	NA	NA	NA
Tier 4, (12,001 CF and Over) [1]	2.30	NA	NA	NA	NA	NA
Residential [2]						
Tier 1, (0 - 1,000 CF)	NA	$1.09	$1.11	$1.13	$1.15	$1.17
Tier 2, (1,001 - 6,000 CF)	NA	1.14	1.16	1.18	1.20	1.22
Tier 3, (6,001 - 12,000 CF)	NA	1.56	1.58	1.60	1.62	1.64
Tier 4, (12,001 CF and Over)	NA	1.77	1.79	1.81	1.83	1.86
Non-Residential						
All Consumption	NA	$1.47	$1.48	$1.50	$1.52	$1.54
Irrigation/Other						
All Consumption	NA	$1.78	$1.80	$1.83	$1.85	$1.87

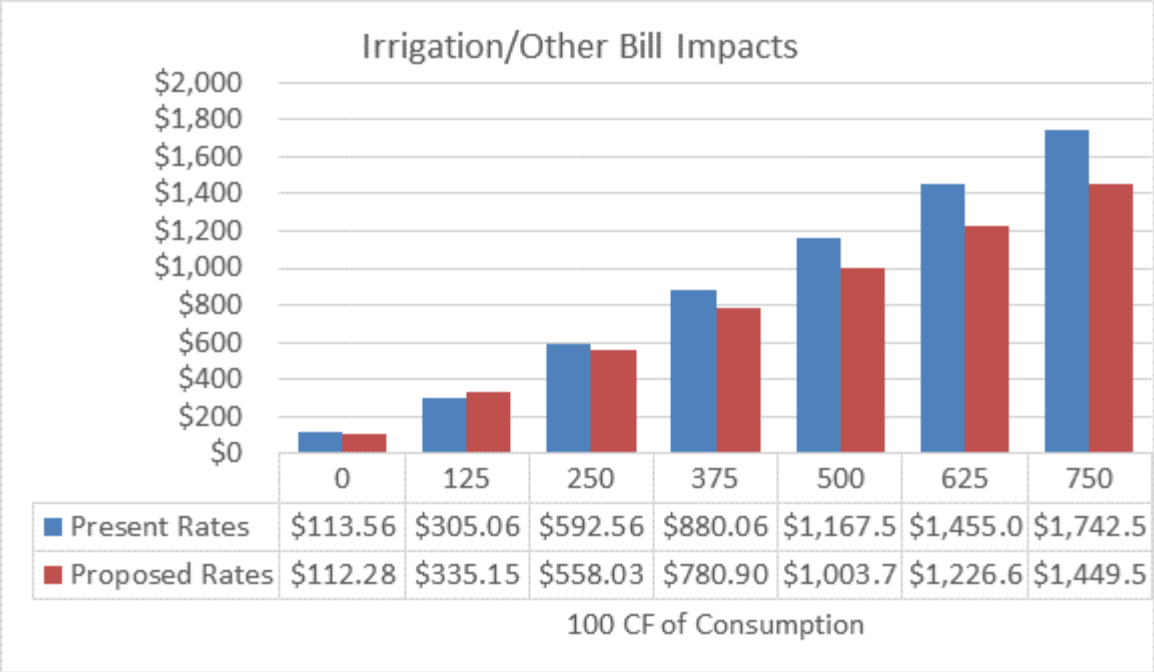
[1] Present tier sizes vary depending on the meter size, tier sizes shown reflect a 5/8" meter

[2] Proposed rates assume all meter sizes have the same tier sizes as shown in table 5-9

It is important to note that the bill impacts will not only vary between customer classes, as the cost of service results show cost differences, but also customers in the same class. This is due to the tier pricing being based on the costs associate with the District's costs and allocated based on a snapshot of consumption characteristics. Shown below are typical customer bill impacts; these are not meant to be prescriptive for projecting a customers' bill impact but rather representative.


Residential Bill Impacts
$160
$140
$120
$100
$80
$60
$40
$20
$0
0 5 10 15 20 25 30
Present Rates $113.56 $113.56 $113.56 $120.76 $127.96 $135.16 $142.36
Proposed Rates $112.28 $117.73 $123.18 $128.88 $134.58 $140.28 $145.98
100 CF of Consumption


Non-Residential Bill Impacts
$350
$300
$250
$200
$150
$100
$50
$0
0 20 40 60 80 100 120
Present Rates $113.56 $127.96 $156.76 $185.56 $221.56 $257.56 $293.56
Proposed Rates $112.28 $141.60 $170.92 $200.24 $229.55 $258.87 $288.19
100 CF of Consumption



5.6 Summary of the Proposed Rate Revenues

The rates for each customer class of service meet the results of the revenue requirement and cost of service results. Provided in Table 5 - 10 is a summary of the revenue targets based on the revenue requirement and cost of service analyses for the FY 2018/19 proposed rate adjustment.

Table 5 - 10
Comparison of the FY 2018/19 Proposed Revenues and Allocated Costs ($000's)

	Present Revenues	Allocated Revenues	Proposed Revenues
Residential	$10,068	$10,286	$10,286
Non-Residential	758	748	760
Irrigation/Other	253	237	238
Total	**$11,078**	**$11,271**	**$11,284**

The proportional allocation of costs to the various customer classes of service is based on District budgeted O&M expenses as well as capital projects as identified in the revenue requirement analysis. Additionally, actual consumption data was used from FY 2016/17 to allocate costs to specific customer classes and tiers, where applicable. Any discrepancy in the summation of the totals are due to rounding. A more detailed analysis of the projection of the proposed revenues is included within the Technical Appendix of this report in Exhibit 7.

This concludes the discussion of the proposed water rates. Detailed exhibits for the various rate designs are included within the water technical appendices.

5.7 Proposed Water Shortage Rates

Water Shortage rates are one of several "tools" to assist during a drought or water emergency. In the District's case, the water shortage rates will work in tandem with the District's other conservation programs.

When properly designed, water shortage rates address the issues of the financial/revenue impacts of decreased consumption. In a drought, water shortage rates are one mechanism or tool used to maintain sufficient revenues during water shortage events. When a utility enters a drought stage, it is not uncommon for a utility to have a set of water shortage rates to maintain sufficient revenues due to reductions in consumption.

The water rates being proposed in this water rate study assume "normal" water conditions. Under water shortage conditions, the District will need to have customers reduce their consumption and provide sufficient conservation savings to meet the District's conservation savings goals, or based on State mandated goals, that reflect the District's current water shortage stages. For purposes of establishing water shortage rates, five stages for water shortage were established based on the District's current response to water shortage events. These water shortage stages are summarized below.

- Advisory Stage 1 - less than 10%,
- Alert Stage 2 - between 11% and 15%
- Moderate Stage 3 - between 16% and 25%,
- Critical Stage 4 – between 26% and 49%
- Emergency State 5 - over 50%.

To help achieve the needed savings in each water shortage stage, water shortage rates were developed based on each of the stages identified by the District to maintain revenue levels to provide services during times of consumption reductions. For purposes of developing the water shortage rate pricing, it was assumed that the savings in each stage would target the mid-point of the stage (e.g., State 3 = 16%-25%, or 20.5% average reduction in consumption).

Based on the conservation savings estimated for each water shortage stage, the water shortage rates were developed to maintain the current level of revenues for each customer class of service. Provided below in Table 5-11 is a summary of the water shortage rates for each stage.

Table 5 - 11 Water Shortage Rates per $/100 CF							
Stage	% Target Reduction	Current	FY 18-19	FY 19-20	FY 20-21	FY 21-22	FY 22-23
Advisory Stage 1	<10%	$0.00	$0.15	$0.15	$0.16	$0.16	$0.17
Alert Stage 2	11% - 15%	0.00	0.20	0.21	0.22	0.23	0.24
Moderate Stage 3	16% - 25%	0.00	0.35	0.36	0.37	0.38	0.39
Critical Stage 4	26% - 49%	0.00	0.80	0.82	0.84	0.86	0.88
Emergency Stage 5	>50%	0.00	1.29	1.32	1.35	1.38	1.41

The water shortage rates in Table 5-11 are added to the rates in place at the time the water shortage stage is declared. For example, if the first tier rate is currently $1.09/100 CF and the District declares a Stage 2 water shortage, then the first tier rate will change to $1.29/100 CF ($1.09 + $0.20). These water shortage rates can be added to the District's proposed rates, at the appropriate water shortage stage level, effective July 16, 2018, as directed by the District's Board. Implementation of these water shortage rates will help the District maintain revenue levels during drought or other water emergency related consumption reductions. Table 5-12 provides scenarios for a residential customer to better understand how the impact of the water shortage rates.

Table 5 - 12 Residential Water Shortage Rates Bill Impact						
	Normal Conditions	Advisory Stage 1	Alert Stage 2	Moderate Stage 3	Critical Stage 4	Emergency Stage 5
Water Shortage Conservation Target		**5.0%**	**13.0%**	**20.5%**	**37.5%**	**50.0%**
Customers Using 1,200 CF						
Assuming No Change in Use - 1,200 CF	$125.46	$127.26	$127.86	$129.66	$135.06	$140.94
Assuming Reduced Usage -						
Revised Usage	1,200	1,100	1,000	900	800	600
New Bill	$125.46	$125.97	$125.18	$125.24	$127.40	$126.56
Customers Using 2,400 CF						
Assuming No Change in Use - 2,400 CF	$139.14	$142.74	$143.94	$147.54	$158.34	$170.10
Assuming Reduced Usage -						
Revised Usage	2,400	2,300	2,100	1,900	1,500	1,200
New Bill	$139.14	$141.45	$139.92	$140.09	$140.88	$140.94
Customers Using 4,800 CF						
Assuming No Change in Use - 4,800 CF	$166.50	$173.70	$176.10	$183.30	$204.90	$228.42
Assuming Reduced Usage -						
Revised Usage	4,800	4,600	4,200	3,800	3,000	2,400
New Bill	$166.50	$171.12	$168.06	$168.40	$169.98	$170.10

As can be seen in the above table, if a customer does not modify their consumption, their utility bill will increase substantially. However, if they do provide the requested savings, their bill will be similar to the "normal" water conditions bill. For example, a customer using 2,400 CF currently pays $139.14/bi-month. If the District is in Stage 2 and the customer does not change their usage, then their bill will increase to $143.92. However, if they reduce their 2,400 CF of usage by 300 CF (13% reduction), their revised use of 2,100 CF will be billed at $139.92./bi-month.

5.8 Water Rate Study Recommendations

Based on the results of the water rate study, HDR recommends the following:

- Revenue adjustments are necessary to prudently fund operating and capital renovation and replacement expenses.
- Water revenues should be adjusted 1.7% in FY 2018/19 and 1.8% for FY 2020/21 through FY 2021/22 and 1.9% in FY 2022/23.
    - The proposed rates would be effective July 16st of each year (the beginning of the fiscal year).
- The proposed rates reflect the results of the cost of service analysis and the proportional allocation of costs to the various customer classes of service.
- Prior to the end of the financial planning projected period, the District should complete a review of the water revenue levels and costs at that time.

5.9 Summary of the Water Rate Study

This completes the analysis for the Calaveras County Water District's water utility. This study has provided a comprehensive review and development of proposed water rates for the District. Adoption of the proposed water rates will allow the District to meet its current and projected water system financial obligations for the time period reviewed based on the assumed customer growth, capital plan and deferred capital, and inflationary increases in operating costs. Should these assumptions change, the proposed rate adjustments may also need to be revised to reflect the current conditions.

Technical Appendix – Water Technical Analysis

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 1 - Escalation Factors

	Budget	Projected					
ESCALATION FACTORS	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	**Notes**
Revenues:								
Residential	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Residential-Multi	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Commercial	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Other	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Property Tax	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Electric Revenue	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Misc. Revenue	Budget	1.6%	1.0%	1.0%	1.0%	1.0%	1.0%	
Flat	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Expenses								
Labor	Budget	Budget	2.0%	2.0%	3.0%	3.0%	3.0%	
Benefits	Budget	Budget	4.8%	4.8%	3.0%	3.0%	3.0%	
Materials & Supplies	Budget	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Medical	Budget	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	
Equipment	Budget	Budget	3.0%	3.0%	3.0%	3.0%	4.2%	
Miscellaneous	Budget	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Power/Utilities	Budget	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	
Services	Budget	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Cell Phone	Budget	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Permits	Budget	Budget	7.0%	7.0%	7.0%	7.0%	7.0%	
Growth	Budget	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Flat	Budget	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	
Investment Interest	0.5%	0.5%	0.5%	1.0%	1.0%	1.0%	1.0%	

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Sources of Funds								
Revenues								
Residential	$9,834,184	$9,945,505	$10,067,488	$10,140,632	$10,242,235	$10,345,332	$10,448,280	As Residential
Commercial	$685,709	$698,006	706,568	$715,448	722,603	729,873	737,139	As Commercial
Multi-Family	$49,737	$50,563	51,183	$51,998	52,518	53,050	53,575	As Residential-Multi
Other (Landscape, Irrigation)	$243,053	$249,848	252,912	$256,046	258,607	261,208	263,809	As Other
Total Rate Revenues	**$10,812,683**	**$10,943,922**	**$11,078,151**	**$11,164,124**	**$11,275,962**	**$11,389,463**	**$11,502,803**	Budgeted & Forecast Rev
Other Revenues								
Fees								
Account Establishment Fees	$47,150	$42,300	$47,000	$47,000	$47,000	$47,000	$47,000	As Flat
Delinquent Account Fees	159,100	162,800	162,800	162,800	162,800	162,800	162,800	As Flat
Repairs/Reimbursements	3,700	370	370	370	370	370	370	As Flat
Install Water Meter	20,000	18,000	20,000	20,000	20,000	20,000	20,000	As Flat
Other Installation Charges	370	0	0	0	0	0	0	As Flat
Inspection Fees	992	750	900	900	900	900	900	As Flat
Plan Check Fee	2,590	1,110	0	0	0	0	0	As Flat
Backflow Certification	16,000	0	0	0	0	0	0	As Flat
Wholesale/Irrigation/Hydrant Sales/Lancha Plana	164,500	160,000	185,000	185,000	185,000	185,000	185,000	As Flat
Developer Reimbursements	21,690	18,500	18,500	18,500	18,500	18,500	18,500	As Flat
Other	$370	$370	$370	$370	$370	$370	$370	As Flat
Non-Operating Revenue								
Stand-by Fees	$98,050	$98,050	$98,050	$98,050	$98,050	$98,050	$98,050	As Flat
Restricted Property Taxes (net of transfer to reserves)	1,550,497	1,609,570	1,641,760	1,674,596	1,697,087	1,742,249	1,777,094	As Property Tax
Unrestricted Property Taxes (net of transfer to reserve	122,771	110,113	112,315	114,562	116,853	119,190	121,574	As Property Tax
Investment Income (allocated to operating)	32,000	45,000	47,000	49,000	53,000	53,000	55,000	As Other
Other:	0	0	0	0	0	0	0	As Misc. Revenue
Power Sales, North Fork	389,684	399,600	407,592	415,744	432,540	432,540	436,865	As Misc. Revenue
Power Sales, New Hogan	111,000	167,980	129,500	129,500	129,500	129,500	130,795	As Misc. Revenue
Grants/OES Reimbursements	0	0	0	0	0	0	0	As Misc. Revenue
Sale of Surplus Equipment	0	0	0	0	0	0	0	As Misc. Revenue
Copies	74	0	0	0	0	0	0	As Misc. Revenue
Misc. Operating Revenue	19,240	11,100	11,100	11,100	11,100	11,100	11,211	As Misc. Revenue
Other District Reimbursements	11,100	7,400	7,400	7,400	7,400	7,400	7,474	As Misc. Revenue
Rental Income per schedule	28,440	60,065	60,192	60,984	62,568	62,568	63,194	As Misc. Revenue
Total Other Revenues	$2,799,317	$2,913,078	$2,949,849	$2,995,876	$3,043,038	$3,090,537	$3,136,197	
Total Sources of Funds	**$13,612,000**	**$13,857,000**	**$14,028,000**	**$14,160,000**	**$14,319,000**	**$14,480,000**	**$14,638,999**	

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Applications of Funds								
Salaries and Benefits								
Salaries/Wages	$3,424,311	$3,809,093	$3,975,536	$4,127,447	$4,251,159	$4,378,577	$4,509,814	As Labor
Overtime	76,936	126,306	147,719	151,649	156,195	160,876	165,698	As Benefits
Compensated Absences	-	0	0	0	0	0	0	As Benefits
Benefits	2,107,139	2,531,848	2,706,446	2,830,639	2,915,482	3,002,867	3,092,870	As Benefits
Medical/Dental Reimbursement	24,690	18,784	22,089	25,394	26,410	27,466	28,565	As Medical
Total Salaries and Benefits	$5,633,076	$6,486,030	$6,851,790	$7,135,129	$7,349,245	$7,569,786	$7,796,946	
Service and Supplies								
Utilities	$730,707	$633,613	$640,947	$651,291	$677,343	$704,436	$732,614	As Power/Utilities
Materials & Supplies	408,004	412,713	346,124	350,728	361,250	372,088	383,250	As Materials & Supplies
Safety Materials & Supplies	11,000	26,965	27,403	27,848	28,684	29,544	30,431	As Materials & Supplies
Administrative Technology	25,160	24,820	25,223	25,633	26,274	26,931	27,604	As Services
Chemicals	215,600	210,600	214,022	217,499	224,024	230,745	237,667	As Materials & Supplies
Outside Services/Repairs	79,569	104,204	105,897	107,618	110,308	113,066	115,893	As Services
Service Maintenance Contracts	172,168	278,409	282,056	286,632	293,797	301,142	308,671	As Services
Drug & Alcohol Testing	1,110	1,095	565	570	584	599	613	As Services
Building Repairs	2,220	3,650	3,709	3,770	3,883	3,999	4,119	As Labor
Recruiting	7,400	3,650	3,709	3,770	3,883	3,999	4,119	As Labor
Claims/Damages	3,700	3,650	3,709	3,770	3,864	3,960	4,059	As Miscellaneous
Computer Licenses and Maint Agreements	13,868	15,403	15,653	15,908	16,305	16,713	17,131	As Services
Janitorial Services	17,242	17,009	17,285	17,566	18,005	18,456	18,917	As Services
Laboratory Services	72,000	102,000	103,657	105,342	107,975	110,674	113,441	As Services
Outside Legal Fees	236,800	181,770	170,123	172,760	177,079	181,506	186,043	As Services
Accounting/Auditing	23,458	24,528	24,927	25,332	25,965	26,614	27,279	As Services
Advertising/Publicity	1,110	1,460	1,484	1,508	1,546	1,584	1,624	As Services
Elections	5,180	0	8,030	0	0	0	0	As Materials & Supplies
Professional Services	333,421	330,671	189,715	191,517	196,305	201,213	206,243	As Services
Vehicle Expense	216,250	251,750	255,840	259,997	267,797	275,831	287,366	As Equipment
Rental Exp/Vehicle and Equip.	10,100	20,100	20,427	20,758	21,381	22,023	22,944	As Equipment
Forms and Supplies	1,591	1,643	1,669	1,696	1,747	1,800	1,854	As Materials & Supplies
Permits & Licenses	6,600	7,000	7,114	7,229	7,410	7,595	7,785	As Miscellaneous
Postage	11,100	15,038	15,282	15,531	15,997	16,476	16,971	As Materials & Supplies

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Publications and Subscriptions	1,355	1,048	700	708	725	744	762	As Miscellaneous
Dues and Memberships	72,211	64,072	64,887	65,939	67,588	69,278	71,009	As Miscellaneous
Recording Title Reports	0	0	0	0	0	0	0	As Services
Printing	740	183	3	1	1	1	1	As Equipment
Training, Conferences and Travel	51,176	71,018	45,230	45,892	47,039	48,215	49,420	As Services
Other Travel Costs	25,049	6,570	24,867	24,916	25,539	26,177	26,831	As Miscellaneous
Director Conf & Committee Expense	0	0	0	0	0	0	0	As Miscellaneous
Hogan Payment-Purchased Power	217,014	214,081	217,560	221,095	229,938	239,136	248,701	As Power/Utilities
Purchased Water	10,000	5,000	5,081	5,164	5,370	5,585	5,809	As Power/Utilities
Retired Employee Costs	872,534	414,640	421,377	428,224	441,059	454,279	467,894	As Labor
Bad Debt Expense	40,700	35,040	35,609	36,188	37,093	38,020	38,970	As Miscellaneous
Unemployment Claims	1,480	1,460	1,484	1,508	1,553	1,600	1,648	As Labor
Insurance	166,500	146,000	148,372	150,783	154,553	158,416	162,377	As Services
Fed, State & County Wtr/Swr Fees	65,000	65,000	66,056	67,129	68,808	70,528	72,291	As Miscellaneous
Federal Dam & Admin Fees	1,480	1,460	1,484	1,508	1,546	1,584	1,624	As Miscellaneous
State Water Right Fees	24,420	21,900	22,256	22,617	23,183	23,762	24,357	As Miscellaneous
Mandated Plans	0	25,550	415	198	203	208	214	As Miscellaneous
Strategic Plans/Updates.	74,000	50,042	813	388	398	408	418	As Services
Water Conservation	18,500	10,950	11,128	11,309	11,591	11,881	12,178	As Miscellaneous
Merchant Credit Card Discount	41,440	43,800	44,512	45,235	45,687	46,144	46,606	As Growth
Misc. Operating/Maint. Exp.	0	0	0	0	0	0	0	As Miscellaneous
Equipment Purchased	0	0	0	0	0	0	0	As Equipment
Agent Fees	1,480	1,460	1,484	1,508	1,546	1,584	1,624	As Miscellaneous
Calaveras County Fees	0	0	0	0	0	0	0	As Miscellaneous
Misc. Non-Operating Costs	6,497	6,044	(0)	(54)	(55)	(57)	(58)	As Miscellaneous
Total Service and Supply	**$4,296,933**	**$3,857,057**	**$3,597,891**	**$3,644,527**	**$3,754,770**	**$3,868,487**	**$3,989,314**	
Capital Outlay								
Vehicles / Equipment	$273,490	$216,580	$284,600	$295,600	$306,600	$319,600	$332,965	As Equipment
Projects	55,900	30,000	50,000	55,000	60,000	63,000	65,635	As Equipment
Total Capital Outlay	**$329,390**	**$246,580**	**$334,600**	**$350,600**	**$366,600**	**$382,600**	**$398,600**	
Total Oper. & Maint. Expense	**$10,259,399**	**$10,589,667**	**$10,784,281**	**$11,130,256**	**$11,470,614**	**$11,820,873**	**$12,184,860**	

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Capital Expenditures Funding	$3,273,050	$3,305,781	$3,363,191	$3,372,227	$3,405,949	$3,440,009	$3,474,409	
Debt Service								
PERS Side Fund - Principal	$0	$219,174	$187,625	$0	$0	$0	$0	Debt Schedule
PERS Side Fund - Interest	0	9,029	2,544	0	0	0	0	
BBVA Compass Bond Refinance - Principal	1,722,644	442,726	0	0	0	0	0	Debt Schedule
BBVA Compass Bond Refinance - Interest	20,604	3,528	0	0	0	0	0	
Umpqua Capital R&R Loan - Principal	0	650,340	1,113,008	1,136,957	1,161,628	0	0	
Umpqua Capital R&R Loan - Interest	87,309	83,843	67,399	43,449	18,778	0	0	
Vac-Con Loan - Principal	49,938	50,339	0	0	0	0	0	
Vac-Con Loan - Interest	2,242	862	0	0	0	0	0	
Wallace Loan Payoff - Principal	70,051	0	0	0	0	0	0	
Wallace Loan Payoff - Interest	5,110	0	0	0	0	0	0	
New Hogan (US Bureau of Reclaimation Note 1970) - Pri	40,463	40,336	40,504	42,812	44,738	46,751	48,855	Hogan Dam 56.5% share with Stocl
New Hogan (US Bureau of Reclaimation Note 1970) - Int	18,486	16,128	13,317	11,656	9,921	8,107	6,212	
Admin Building - Principal	0	0	416,641	427,057	437,734	448,677	459,892	Deferred Principal payment for 1 y
Admin Building - Interest	55,500	54,750	54,750	44,334	33,658	22,707	11,498	
New Vac Con -Principal	0	0	45,342	62,526	64,976	67,521	70,168	
New Vac Con -Interest	0	0	8,907	9,806	7,355	4,810	2,164	
USDA Reach 3a Bond - Principal	0	42,700	43,700	44,700	45,700	46,700	47,700	
USDA Reach 3a Bond - Interest	15,896	57,209	57,543	56,549	55,531	54,492	53,430	
New Revenue Bond - Principal	0	0	0	0	0	0	0	20 yrs @ 5.0%
New Revenue Bond - Interest	0	0	0	0	0	0	0	
Net Debt Service	**$2,088,243**	**$1,670,964**	**$2,051,279**	**$1,879,845**	**$1,880,019**	**$699,766**	**$699,918**	
Change in Working Capital (+ = To Reserves / - = From Reserves)								
Operating Fund	$511,836	$369,096	(233,609)	15,084	8,237	1,035	(1,906)	
BBVA Debt Service - Expansion Funds	(1,030,204)	(298,969)	0	0	0	0		
BBVA Debt Service - Fund 108	(137,572)	0	0	0	0	0		
Capital R&R Debt Service - R&R Funds	(87,309)	(734,183)	(1,180,407)	(1,180,406)	(1,180,406)	0	0	
USDA Reach 3a Bond - Fund 125	0	(99,909)	(101,243)	(101,249)	(101,231)	(101,192)	(101,130)	
OP HQ Interest Payment - Fund 108	(55,500)	(55,500)	(55,500)	(44,941)	(34,119)	(23,018)	(11,655)	
Operations Funding Gap - Fund 108	0	(303,473)	0	0	0	0	0	
Wallace Loan Payoff - Fund 108	(60,249)	0	0	0	0	0	0	
New Hogan O&M Costs	(77,700)	0	0	0	0	0	0	
Water Rights Expenses - Fund 108	(220,000)	(80,000)	0	0	0	0	0	
Capital Equipment/Projects - Fund 108	(361,901)	0	0	0	0	0	0	
Capital R&R Projects - R&R Funds	(405,361)	(415,718)	(319,999)	(424,074)	(428,315)	(432,598)	(436,924)	
CIP Projects	(84,732)	(90,756)	(91,664)	(92,580)	(93,506)	(94,441)	(95,385)	
Total change in Working Capital	**($2,008,692)**	**($1,709,412)**	**($1,982,422)**	**($1,828,167)**	**($1,829,340)**	**($650,214)**	**($647,001)**	
Total Revenue Requirements	**$13,612,000**	**$13,857,000**	**$14,216,329**	**$14,554,161**	**$14,927,243**	**$15,310,434**	**$15,712,186**	

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Balance/(Deficiency) of Funds	$0	$0	($188,329)	($394,161)	($608,243)	($830,434)	($1,073,187)	
Rate Adjust. as a % of Rate Rev	**0.0%**	**0.0%**	**1.7%**	**3.5%**	**5.4%**	**7.3%**	**9.3%**	
Proposed Rate Adjustment	0.0%	0.0%	1.7%	1.8%	1.8%	1.8%	1.9%	
Addt'l Rev from Proposed Adjustments	$0	$0	$188,329	$394,161	$608,242	$830,434	$1,073,186	
Net Bal/(Def) of Funds After Rate Adj.	0	0	(0)	(0)	(0)	(1)	(1)	
Additional Rate Increase Needed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Debt Service Coverage Ratio								
Before Rate Adjustment	3.17	3.93	3.22	3.41	3.33	8.72	8.47	
After Rate Adjustment	3.17	3.93	3.31	3.62	3.65	9.90	10.00	
Average Residential Bill (Bi-Monthly)	$135.25	$135.25	$137.54	$140.02	$142.54	$145.11	$147.86	
$ Change Per Month			2.30	2.48	2.52	2.57	2.76	
Cumulative $ Change per Month			2.30	4.77	7.30	9.86	12.62	
Operating Fund								
Beginning Working Capital Balance [2]	$11,516,714	$12,028,550	$12,397,646	$10,425,554	$10,599,407	$10,769,588	$10,935,807	
Plus: Change in Working Capital General	511,836	369,096	0	15,083	8,236	1,035	0	
Plus: Loan Repayment	0	0	0	158,770	161,945	165,184	168,488	
Less: Uses of Funds	0	0	233,609	0	0	0	1,907	
Less: Loan to Sewer Fund	0	0	1,738,483	0	0	0	0	
Ending Balance	$12,028,550	$12,397,646	$10,425,554	$10,599,407	$10,769,588	$10,935,807	$11,102,387	
Operating Fund Target Balance (90 Days O&M)		$2,611,151	$2,659,138	$2,744,447	$2,828,371	$2,914,736	$3,004,486	

[1] minimum balance = 90 days O&M plus taxes
[2] Beginning balances from Statement of Accounts

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 3 - Capital Funding

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	
R&R Rate Revenue								
Residential	3,022,077	$3,038,506	$3,039,247	$3,069,639	$3,100,336	$3,131,339	$3,162,652	As Residential
Commercial	210,797	213,267	$224,689	226,935	229,205	231,497	233,812	As Commercial
Multi-Family	15,296	15,521	$17,608	17,784	17,962	18,142	18,323	As Residential-Multi
Other (Landscape, Irrigation)	74,726	76,321	$81,647	82,464	83,289	84,121	84,963	As Other
Total R&R Rate Revenue	$3,273,050	$3,305,781	$3,363,191	$3,372,227	$3,405,949	$3,440,009	$3,474,409	
Transfer to (from):								
R&R Funds for Operations								
Transfer in for CIP/Capital Outlay	(84,732)	(84,732)	0	(90,756)	(91,664)	(92,580)	(93,506)	
Transfer to Ops - R&R Sal/Ben	$405,361	$415,718	$319,999	$424,074	$428,315	$432,598	$436,924	
Transfer to Ops - Debt Serv-Cap R&R	87,309	734,183	1,180,407	1,180,406	1,180,406	0	0	
Transfer to Ops - for USDA Reach 3a Bond	$0	$99,909	$101,243	$101,249	$101,231	$101,192	$101,130	
Transfer to Ops - debt Serv-Fund 108	137,572	0	0	0	0	0	0	
Transfer to Ops for Debt Serv-Exp Funds	1,030,204	298,969	0	0	0	0	0	
Transfer to Ops for New Debt Service	0	0	0	0	0	0	0	

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 3 - Capital Funding

		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Capital Outlays								
Big Trees	Redwood Tanks (Cal-OES/FEMA)	$1,475,000	$0	$0	$0	$0	$0	$0
Ebbetts Pass	Reach 3A Pipeline (USDA)	4,360,000	1,000,000	0	0	0	0	0
Jenny Lind	Master Plan	28,000	32,000	0	0	0	0	0
Copper Cove	Master Plan	10,000	50,000	0	0	0	0	0
West Point	Master Plan	20,000	65,000	0	0	0	0	0
Jenny Lind	Clearwell #2 / Repair & Paint	0	200,000	0	0	0	0	0
Forest Mead.	Larkspur Tank / Repair & Paint	0	200,000	0	0	0	0	0
Wallace	Gound & Elevated Tanks/Repair & P	0	250,000	0	0	0	0	0
Jenny Lind	Pretreatment (Cal-OES/FEMA)	0	2,800,000	1,000,000	0	0	0	0
West Point	AMR/AMI Meter Program (Phase 1)	0	175,000	175,000	150,000	0	0	0
West Point	Wilson Dam	0	250,000	250,000	0	0	0	0
Ebbetts Pass	Techite Pipeline	0	625,000	625,000	0	0	0	0
Ebbetts Pass	Reach 1 Pipeline	0	2,500,000	2,500,000	0	0	0	0
Ebbetts Pass	Sawmill Tank / Repair & Paint	0	250,000	500,000	0	0	0	0
Copper Cove	Tank B /Repair & Paint	0	0	0	250,000	0	0	0
Copper Cove	Clearwell/Repair & Paint	0	0	0	500,000	0	0	0
Ebbetts Pass	Hunters Clearwell / Repair & Paint	0	0	250,000	250,000	0	0	0
Sheep Ranch	New Water Plant & Clearwell	0	0	200,000	600,000	200,000	0	0
West Point	Backup Water Filter	0	0	250,000	750,000	250,000	0	0
Sheep Ranch	White Pines/Blagen Mill Pond	0	250,000	250,000	3,500,000	0	0	0
Jenny Lind	A-B Transmission Main	0	0	0	0	0	0	3,500,000
Copper Cove	Zone 'C' Pump Station & Transmissi	0	0	0	500,000	1,500,000	3,500,000	0
Various	Arc Flash Assessment	0	0	0	0	0	0	0
Various	Tanks / Replacement, Repairs, Paint	0	0	0	0	0	0	0
Various	Pump Stations / Renovation	0	0	50,000	50,000	50,000	50,000	0
Various	Road Repairs	0	0	25,000	25,000	25,000	25,000	0
Various	Pipelines, Meters, Mapping	0	75,000	75,000	100,000	0	0	0
Total Planned Capital Improvements		$5,893,000	$8,722,000	$6,150,000	$6,675,000	$2,025,000	$3,575,000	$3,500,000
Unplanned Capital		$0	$0	$0	$0	$0	$0	$0
Total Capital Outlays		**$5,893,000**	**$8,722,000**	**$6,150,000**	**$6,675,000**	**$2,025,000**	**$3,575,000**	**$3,500,000**

Calaveras County Water District
Water Utility - 300
Revenue Requirement
Exhibit 3 - Capital Funding

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Capital Funding							
Grant Funds	$1,120,910	$2,334,984	$742,105	$0	$0	$0	$0
R&R Funding	2,581,269	5,250,837	4,895,395	6,412,500	1,262,500	1,812,500	3,500,000
Expansion Funds	58,000	647,000	512,500	262,500	762,500	1,762,500	0
Other Funding	2,132,821	489,179	0	0	0	0	0
New Debt	0	0	0	0	0	0	0
	$5,893,000	$8,722,000	$6,150,000	$6,675,000	$2,025,000	$3,575,000	$3,500,000
R&R Fund							
Beginning Balance	$10,456,251	$10,655,535	$7,583,129	$4,471,522	($183,724)	$344,851	$1,546,462
Plus:							
R&R Rate Revenue	$3,273,050	$3,305,781	$3,363,191	$3,372,227	$3,405,949	$3,440,009	$3,474,409
Transfer from Operations	84,732	84,732	0	90,756	91,664	92,580	93,506
Loan Proceeds	0	0	0	0	0	0	0
Interest Earnings	53,013	37,727	22,246	0	3,414	15,312	10,763
Less:							
Transfers to Operations	630,242	1,249,810	1,601,649	1,705,729	1,709,952	533,790	538,054
R&R Capital Projects	2,581,269	5,250,837	4,895,395	6,412,500	1,262,500	1,812,500	3,500,000
Ending Fund Balance	$10,655,535	$7,583,129	$4,471,522	($183,724)	$344,851	$1,546,462	$1,087,086
Expansion Fund							
Beginning Fund Balance	$3,983,540	$2,914,964	$1,980,335	$1,475,174	$1,224,800	$466,923	($1,295,577)
Plus:							
Additions to Fund	$0	$0	$0	$0	$0	$0	$0
Interest Earnings	19,628	11,340	7,339	12,127	4,623	0	0
Less:							
Expansion Capital Projects	58,000	647,000	512,500	262,500	762,500	1,762,500	0
Transfer to Operations	1,030,204	298,969	0	0	0	0	0
Ending Fund Balance	$2,914,964	$1,980,335	$1,475,174	$1,224,800	$466,923	($1,295,577)	($1,295,577)
R&R and Expansion Ending Fund Balances	$13,570,499	$9,563,463	$5,946,696	$1,041,076	$811,775	$250,885	($208,491)

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Commodity & Capacity

	Recent 12 Mo. Consumption (100 CF)	Estimated 15.0% Loses	Net Water Delivered (Flow + Losses)	Consumption (MGD) [3]	Component % of Total	Class Total % of Total
Residential						84.5%
Tier 1	491,706	73,756	565,462	1.16	32.5%	
Tier 2	587,077	88,062	675,139	1.38	38.8%	
Tier 3	132,884	19,933	152,817	0.31	8.8%	
Tier 4	65,681	9,852	75,533	0.15	4.3%	
Commercial						8.7%
Tier 1	132,145	19,822	151,966	0.31	8.7%	
Tier 2	0	0	0	0.00	0.0%	
Tier 3	0	0	0	0.00	0.0%	
Tier 4	0	0	0	0.00	0.0%	
Multi-Family						0.8%
Tier 1	12,783	1,917	14,700	0.03	0.8%	
Tier 2	0	0	0	0.00	0.0%	
Tier 3	0	0	0	0.00	0.0%	
Tier 4	0	0	0	0.00	0.0%	
Other (Landscape, Irrigation)						5.9%
Tier 1	89,563	13,434	102,997	0.21	5.9%	
Tier 2	0	0	0	0.00	0.0%	
Tier 3	0	0	0	0.00	0.0%	
Tier 4	0	0	0	0.00	0.0%	
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Total Actual Flow	**1,511,838**	**226,776**	**1,738,614**	**3.56**	**100.0%**	**100.0%**
		Water Production Reports (MGD)		**4.374**		
Allocation Factor						**(COM)**

[1] 100 CF (Hundred Cubic Feet) = 748 Gallons
[2] District-Wide Demand for Potable Water 2015 1,800,335 100 CF 2015 Urban Water Management Plan, Calaveras County Water District
[3] 2016/17 Production Reports 4.374 MGD

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Commodity & Capacity

	Capacity - Supply				
	Consumption (MGD)	**Peaking Factors [1]**	**Peak Day Use (MGD)**	**Component % of Total**	**Class % of Total**
Residential					77.4%
Tier 1	1.16	1.12	1.30	25.0%	
Tier 2	1.38	1.22	1.69	32.5%	
Tier 3	0.31	2.07	0.65	12.5%	
Tier 4	0.15	2.48	0.38	7.4%	
Commercial					11.3%
Tier 1	0.31	1.88	0.59	11.3%	
Tier 2	0.00	0.00	0.00	0.0%	
Tier 3	0.00	0.00	0.00	0.0%	
Tier 4	0.00	0.00	0.00	0.0%	
Multi-Family					1.1%
Tier 1	0.03	1.88	0.06	1.1%	
Tier 2	0.00	0.00	0.00	0.0%	
Tier 3	0.00	0.00	0.00	0.0%	
Tier 4	0.00	0.00	0.00	0.0%	
Other (Landscape, Irrigation)					10.2%
Tier 1	0.21	2.52	0.53	10.2%	
Tier 2	0.00	0.00	0.00	0.0%	
Tier 3	0.00	0.00	0.00	0.0%	
Tier 4	0.00	0.00	0.00	0.0%	
	---	---	---	---	---
Total	**3.56**		**5.20**	**100%**	**100%**
			1.46		**(CAP)**

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Customer

	Actual Customer		Customer Service & Accounting			Meters & Service	
	Number of Billing Units	% of Total	Weighting Factor	Weighted Customer	% of Total	Weighting Factor [1]	% of Total
Residential	12,960	96.3%	1.00	12,960	96.3%	13,000	93.5%
Commercial	431	3.2%	1.00	431	3.2%	747	5.4%
Multi-Family	11	0.1%	1.00	11	0.1%	48	0.3%
Other (Landscape, Irrigation)	56	0.4%	1.00	56	0.4%	115	0.8%
Total	**13,458**	**100.0%**		**13,458**	**100.0%**	**13,910**	**100.0%**
Allocation Factor		**(AC)**			**(WCA)**		**(WCMS)**

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Fire Protection & Revenue Related

	Number of Meters	Fire Prot. Requirements (gals/min) [1]	Duration (minutes)	Total FP Requirements (1,000 g/min)	% of Total
Residential	12,960	1,000	60	777,619	95.2%
Commercial	431	1,500	60	38,814	4.8%
Multi-Family	11	1,000	60	654	0.1%
Other (Landscape, Irrigation)	56	0	0	0	0.0%
	13,458			**817,087**	**100.0%**

[1] GPM from 2005-06 Master Plans (FP)

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Fire Protection & Revenue Related

	Revenue Related 2018-19 Revenue at Present Rates	% of Total
Residential	$10,067,488	90.9%
Commercial	$706,568	6.4%
Multi-Family	$51,183	0.5%
Other (Landscape, Irrigation)	$252,912	2.3%
Total	**$11,078,151**	**100.00%**

Allocation Factor **(RR)**

Calaveras County Water District
Water Utility - 300
Development of Allocation Factors
Exhibit 4 - Minimum System Analysis

Fire Protection

	Max Gal	Max Minutes	Total
Fire Flow Requirements	1,500	60	90,000
Storage Capacity -		13,170,000	13,170,000
% Public Fire Protection			0.7%
% Capacity			99.3%

Source of Supply

Capacity/Commodity			
Average Day (MGD)	4.37	COMM	47.0%
Peak Day (MGD)	9.30	(1-COMM)=CAP	53.0%

Distribution Main Analysis

Main Size	Length (ft)	Replcmt $	Total
2"	2,640	$72.00	$190,080
4"	11,880	75.00	$891,000
6"	712,652	78.00	$55,586,856
8"	258,047	87.00	$22,450,089
10"	61,319	108.00	$6,622,452
12"	65,102	130.00	$8,463,260
Total 4" - 12"	**1,111,640**		**$94,203,737**

Customer%
(1) Total @ 4" Equiv $80,038,080
/Total Cost **85.0%**

Capacity
(2) Cost for 4" - 8" $78,927,945
(3) 10" - 12" @ Equiv 8" 10,998,627
1+2-3/4 **10.5%**

Fire Protection
1-comm-cap **4.5%**

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of Plant in Service
Exhibit 5 - Plant Allocation

Account Title	Total Plant 2006	Commodity (COM)	Capacity (CAP)	Customer Related			Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
					Weighted for:					
				Actual Customer (AC)	Cust. Acctg. (WCA)	Meters & Services (WCMS)				
Source of Supply										
Raw Water	$1,135,424	$778,662	$356,762	$0	$0	$0	$0	$0	$0	69% (COM)/ 31% (CAP)
Wells	29,627	20,318	9,309	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
	$1,165,051	$798,980	$366,071	$0	$0	$0	$0	$0	$0	
Water Treatment										
Treatment Plant	$8,060,593	$5,527,870	$2,532,723	$0	$0	$0	$0	$0	$0	69% (COM)/ 31% (CAP)
Clearwells	1,882,603	1,291,070	591,534	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
Total Water Treatment	$9,943,196	$6,818,939	$3,124,257	$0	$0	$0	$0	$0	$0	
Distribution/Transmission										
Distribution	$7,020,228	$0	$736,908	$0	$0	$5,967,194	$316,126	$0	$0	10% (CAP)/ 85% (WCMS)/ 5% (FP)
Transmission	70,738	48,511	22,227	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
Water tanks	5,364,229	0	5,327,571	0	0	0	36,658	0	0	99% (CAP)/ 1% (FP)
Meters	177,513	0	0	0	0	177,513	0	0	0	100% (WCMS)
Pressure Reducing Valve	156,822	0	0	0	0	156,822	0	0	0	100% (WCMS)
Pressure Tanks	27,855	0	27,664	0	0	0	190	0	0	99% (CAP)/ 1% (FP)
Temporary Tank	96,025	0	95,369	0	0	0	656	0	0	99% (CAP)/ 1% (FP)
Total Distribution/Transmission	$12,913,409	$48,511	$6,209,739	$0	$0	$6,301,529	$353,631	$0	$0	
Pumping Equipment										
Pumpstation	$1,062,019	$0	$1,062,019	$0	$0	$0	$0	$0	$0	100% (CAP)
Pumps	291,998	0	291,998	0	0	0	0	0	0	100% (CAP)
Fire Pump	7,750	0	0	0	0	0	7,750	0	0	100% (FP)
Total Pumping Equipment	$1,361,767	$0	$1,354,017	$0	$0	$0	$7,750	$0	$0	

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of Plant in Service
Exhibit 5 - Plant Allocation

Account Title	Total Plant 2006	Commodity (COM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related: Weighted for: Cust. Acctg. (WCA)	Customer Related: Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
SCADA	294,691	$202,096	$92,595	$0	$0	$0	$0	$0	$0	69% (COM)/ 31% (CAP)
Unidentified Plant Improvments	75,283,763	$23,069,150	$32,680,124	$0	$0	$18,474,985	$1,059,505	$0	$0	As Above
Plant Before General Plant	**$100,961,878**	**$30,937,676**	**$43,826,803**	**$0**	**$0**	**$24,776,513**	**$1,420,885**	**$0**	**$0**	
General Plant										
Communication	$113,103	$34,658	$49,097	$0	$0	$27,756	$1,592	$0	$0	as Plant Before General
General Plant Equipment	4,177,125	1,279,993	1,813,259	0	0	1,025,086	58,787	0	0	as Plant Before General
Master Plan Update	46,832	14,351	20,329	0	0	11,493	659	0	0	as Plant Before General
Office Equipment	23,477	7,194	10,191	0	0	5,761	330	0	0	as Plant Before General
Buildings	12,732,350	3,901,565	5,527,019	0	0	3,124,578	179,188	0	0	as Plant Before General
Vactor Truck	127,320	39,015	55,269	0	0	31,245	1,792	0	0	as Plant Before General
Vehicles	309,824	94,939	134,492	0	0	76,032	4,360	0	0	as Plant Before General
Total General Plant	$17,530,031	$5,371,715	$7,609,657	$0	$0	$4,301,951	$246,709	$0	$0	
TOTAL PLANT IN SERVICE	**$118,491,909**	**$36,309,391**	**$51,436,460**	**$0**	**$0**	**$29,078,464**	**$1,667,594**	**$0**	**$0**	
Less: Accumulated Depreciation	$62,386,647	$19,117,096	$27,081,581	$0	$0	$15,309,973	$877,997	$0	$0	as Total Plant in Service
Total Accumulated Depreciation	$62,386,647	$19,117,096	$27,081,581	$0	$0	$15,309,973	$877,997	$0	$0	
TOTAL NET PLANT IN SERVICE	**$56,105,262**	**$17,192,295**	**$24,354,878**	**$0**	**$0**	**$13,768,492**	**$789,596**	**$0**	**$0**	

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Commodity (COM)	Capacity (CAP)	Customer Related			Public Fire Protection (PF)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
					Weighted for:					
				Actual Customer (AC)	Cust. Acctg. (WCA)	Meters & Services (WCMS)				
Applications of Funds										
Salaries and Benefits										
Salaries/Wages	$3,975,536	$0	$0	$0	$0	$3,975,536	$0	$0	$0	100% (WCMS)
Overtime	147,719	0	0	0	0	147,719	0	0	0	100% (WCMS)
Compensated Absences	0	0	0	0	0	0	0	0	0	100% (WCMS)
Benefits	2,706,446	0	0	0	0	2,706,446	0	0	0	100% (WCMS)
Medical/Dental Reimbursement	22,089	0	0	0	0	22,089	0	0	0	100% (WCMS)
Total Adminstration - General	$6,851,790	$0	$0	$0	$0	$6,851,790	$0	$0	$0	
Service and Supplies										
Utilities	$640,947	$196,405	$278,230	$0	$0	$157,291	$9,020	$0	$0	as Net Plant in Service
Materials & Supplies	346,124	106,063	150,250	0	0	84,940	4,871	0	0	as Net Plant in Service
Safety Materials & Supplies	27,403	8,397	11,895	0	0	6,725	386	0	0	as Net Plant in Service
Administrative Technology	25,223	7,729	10,949	0	0	6,190	355	0	0	as Net Plant in Service
Chemicals	214,022	214,022	0	0	0	0	0	0	0	100% (COM)
Outside Services/Repairs	105,897	32,450	45,969	0	0	25,988	1,490	0	0	as Net Plant in Service
Service Maintenance Contracts	282,056	86,430	122,439	0	0	69,218	3,970	0	0	as Net Plant in Service
Drug & Alcohol Testing	565	173	245	0	0	139	8	0	0	as Net Plant in Service
Building Repairs	3,709	1,137	1,610	0	0	910	52	0	0	as Net Plant in Service
Recruiting	3,709	1,137	1,610	0	0	910	52	0	0	as Net Plant in Service
Claims/Damages	3,709	1,137	1,610	0	0	910	52	0	0	as Net Plant in Service
Computer Licenses and Maint Agreements	15,653	4,797	6,795	0	0	3,841	220	0	0	as Net Plant in Service
Janitorial Services	17,285	5,297	7,503	0	0	4,242	243	0	0	as Net Plant in Service
Laboratory Services	103,657	103,657	0	0	0	0	0	0	0	100% (COM)
Outside Legal Fees	170,123	52,131	73,849	0	0	41,749	2,394	0	0	as Net Plant in Service
Accounting/Auditing	24,927	7,638	10,820	0	0	6,117	351	0	0	as Net Plant in Service
Advertising/Publicity	1,484	455	644	0	0	364	21	0	0	as Net Plant in Service
Elections	8,030	2,461	3,486	0	0	1,971	113	0	0	as Net Plant in Service
Professional Services	189,715	58,134	82,354	0	0	46,557	2,670	0	0	as Net Plant in Service
Vehicle Expense	255,840	78,397	111,058	0	0	62,784	3,601	0	0	as Net Plant in Service
Rental Exp/Vehicle and Equip.	20,427	6,259	8,867	0	0	5,013	287	0	0	as Net Plant in Service
Forms and Supplies	1,669	511	725	0	0	410	23	0	0	as Net Plant in Service
Permits & Licenses	7,114	2,180	3,088	0	0	1,746	100	0	0	as Net Plant in Service
Postage	15,282	0	0	15,282	0	0	0	0	0	100% (AC)

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Commodity (COM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related: Weighted for: Cust. Acctg. (WCA)	Customer Related: Weighted for: Meters & Services (WCMS)	Public Fire Protection (PF)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Publications and Subscriptions	700	214	304	0	0	172	10	0	0	as Net Plant in Service
Dues and Memberships	64,887	19,883	28,167	0	0	15,924	913	0	0	as Net Plant in Service
Recording Title Reports	0	0	0	0	0	0	0	0	0	as Net Plant in Service
Printing	3	1	1	0	0	1	0	0	0	as Net Plant in Service
Training, Conferences and Travel	45,230	13,860	19,634	0	0	11,100	637	0	0	as Net Plant in Service
Other Travel Costs	24,867	7,620	10,795	0	0	6,103	350	0	0	as Net Plant in Service
Director Conf & Committee Expense	0	0	0	0	0	0	0	0	0	as Net Plant in Service
Hogan Payment-Purchased Power	217,560	149,200	68,360	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
Purchased Water	5,081	3,485	1,597	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
Retired Employee Costs	421,377	129,122	182,917	0	0	103,408	5,930	0	0	as Net Plant in Service
Bad Debt Expense	35,609	10,912	15,458	0	0	8,739	501	0	0	as Net Plant in Service
Unemployment Claims	1,484	455	644	0	0	364	21	0	0	as Net Plant in Service
Insurance	148,372	45,466	64,407	0	0	36,411	2,088	0	0	as Net Plant in Service
Fed, State & County Wtr/Swr Fees	66,056	0	0	0	0	66,056	0	0	0	100% (WCMS)
Federal Dam & Admin Fees	1,484	455	644	0	0	364	21	0	0	as Net Plant in Service
State Water Right Fees	22,256	6,820	9,661	0	0	5,462	313	0	0	as Net Plant in Service
Mandated Plans	415	0	0	0	0	415	0	0	0	100% (WCMS)
Strategic Plans/Updates.	813	249	353	0	0	200	11	0	0	as Net Plant in Service
Water Conservation	11,128	7,631	3,497	0	0	0	0	0	0	69% (COM)/ 31% (CAP)
Merchant Credit Card Discount	44,512	0	0	0	0	0	0	44,512	0	100% (RR)
Misc. Operating/Maint. Exp.	0	0	0	0	0	0	0	0	0	as Net Plant in Service
Equipment Purchased	0	0	0	0	0	0	0	0	0	as Net Plant in Service
Agent Fees	1,484	455	644	0	0	364	21	0	0	as Net Plant in Service
Calaveras County Fees	0	0	0	0	0	0	0	0	0	as Net Plant in Service
Misc. Non-Operating Costs	(0)	(0)	(0)	0	0	(0)	(0)	0	0	as Net Plant in Service
Total Maintenance Expense	$3,597,891	$1,372,823	$1,341,080	$15,282	$0	$783,096	$41,097	$44,512	$0	
Capital Outlay										
Vehicles / Equipment	284,600	$0	$0	$0	$0	$284,600	$0	$0	$0	100% (WCMS)
Projects	50,000	0	0	0	0	50,000	0	0	0	100% (WCMS)
Total Operations Expense	**$334,600**	**$0**	**$0**	**$0**	**$0**	**$334,600**	**$0**	**$0**	**$0**	
Total Oper. & Maint. Expense	**$10,784,281**	**$1,372,823**	**$1,341,080**	**$15,282**	**$0**	**$7,969,486**	**$41,097**	**$44,512**	**$0**	

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of
Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Commodity (COM)	Capacity (CAP)	Customer Related Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (PF)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Debt Service										
PERS Side Fund - Principal	$187,625	$0	$0	$0	$0	$187,625	$0	$0	$0	100% (WCMS)
PERS Side Fund - Interest	2,544	0	0	0	0	2,544	0	0	0	100% (WCMS)
BBVA Compass Bond Refinance - Principal	0	0	0	0	0	0	0	0	0	100% (WCMS)
BBVA Compass Bond Refinance - Interest	0	0	0	0	0	0	0	0	0	100% (WCMS)
Umpqua Capital R&R Loan - Principal	1,113,008	0	0	0	0	1,113,008	0	0	0	100% (WCMS)
Umpqua Capital R&R Loan - Interest	67,399	0	0	0	0	67,399	0	0	0	100% (WCMS)
Vac-Con Loan - Principal	0	0	0	0	0	0	0	0	0	100% (WCMS)
Vac-Con Loan - Interest	0	0	0	0	0	0	0	0	0	100% (WCMS)
Wallace Loan Payoff - Principal	0	0	0	0	0	0	0	0	0	100% (WCMS)
Wallace Loan Payoff - Interest	0	0	0	0	0	0	0	0	0	100% (WCMS)
New Hogan (US Bureau of Reclaimation Note 1970) - Principal	40,504	0	0	0	0	40,504	0	0	0	100% (WCMS)
New Hogan (US Bureau of Reclaimation Note 1970) - Interest	13,317	0	0	0	0	13,317	0	0	0	100% (WCMS)
Admin Building - Principal	416,641	0	0	0	0	416,641	0	0	0	100% (WCMS)
Admin Building - Interest	54,750	0	0	0	0	54,750	0	0	0	100% (WCMS)
New Vac Con -Principal	45,342	0	0	0	0	45,342	0	0	0	100% (WCMS)
New Vac Con -Interest	8,907	0	0	0	0	8,907	0	0	0	100% (WCMS)
USDA Reach 3a Bond - Principal	43,700	0	0	0	0	43,700	0	0	0	100% (WCMS)
USDA Reach 3a Bond - Interest	57,543	0	0	0	0	57,543	0	0	0	100% (WCMS)
New Revenue Bond - Principal	0	0	0	0	0	0	0	0	0	100% (WCMS)
New Revenue Bond - Interest	0	0	0	0	0	0	0	0	0	100% (WCMS)
Net Debt Service	**$2,051,279**	**$0**	**$0**	**$0**	**$0**	**$2,051,279**	**$0**	**$0**	**$0**	
Renewal and Replacement Funding	**$3,363,191**	**$0**	**$0**	**$0**	**$0**	**$3,363,191**	**$0**	**$0**	**$0**	100% (WCMS)
Change in Working Capital										
Operating Fund	($233,609)	$0	$0	$0	$0	($233,609)	$0	$0	$0	100% (WCMS)
BBVA Debt Service - Expansion Funds	0	0	0	0	0	0	0	0	0	100% (WCMS)
BBVA Debt Service - Fund 108	0	0	0	0	0	0	0	0	0	100% (WCMS)
Capital R&R Debt Service - R&R Funds	(1,180,407)	0	0	0	0	(1,180,407)	0	0	0	100% (WCMS)
USDA Reach 3a Bond - Fund 125	(101,243)	0	0	0	0	(101,243)	0	0	0	100% (WCMS)
OP HQ Interest Payment - Fund 108	(55,500)	0	0	0	0	(55,500)	0	0	0	100% (WCMS)
Operations Funding Gap - Fund 108	0	0	0	0	0	0	0	0	0	100% (WCMS)
Wallace Loan Payoff - Fund 108	0	0	0	0	0	0	0	0	0	100% (WCMS)
New Hogan O&M Costs	0	0	0	0	0	0	0	0	0	100% (WCMS)
Water Rights Expenses - Fund 108	0	0	0	0	0	0	0	0	0	100% (WCMS)
Capital Equipment/Projects - Fund 108	0	0	0	0	0	0	0	0	0	100% (WCMS)
Capital R&R Projects - R&R Funds	(319,999)	0	0	0	0	(319,999)	0	0	0	100% (WCMS)
CIP Projects	(91,664)	0	0	0	0	(91,664)	0	0	0	100% (WCMS)
Total Change in Working Capital	**($1,982,422)**	**$0**	**$0**	**$0**	**$0**	**($1,982,422)**	**$0**	**$0**	**$0**	

Calaveras County Water District
Water Utility - 300
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Commodity (COM)	Capacity (CAP)	Customer Related Actual Customer (AC)	Weighted for: Cust. Acctg. (WCA)	Meters & Services (WCMS)	Public Fire Protection (PF)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Total Revenue Requirements	**$14,216,329**	**$1,372,823**	**$1,341,080**	**$15,282**	**$0**	**$11,401,534**	**$41,097**	**$44,512**	**$0**	
Less: Other Income										
Fees										
Account Establishment Fees	47,000	47,000	0	0	0	0	0	0	0	100% (COM)
Delinquent Account Fees	162,800	162,800	0	0	0	0	0	0	0	100% (COM)
Repairs/Reimbursements	370	370	0	0	0	0	0	0	0	100% (COM)
Install Water Meter	20,000	20,000	0	0	0	0	0	0	0	100% (COM)
Other Installation Charges	0	0	0	0	0	0	0	0	0	100% (COM)
Inspection Fees	900	900	0	0	0	0	0	0	0	100% (COM)
Plan Check Fee	0	0	0	0	0	0	0	0	0	100% (COM)
Backflow Certification	0	0	0	0	0	0	0	0	0	100% (COM)
Wholesale/Irrigation/Hydrant Sales/Lancha Plana	185,000	17,865	17,452	199	0	148,370	535	579	0	as Total Revenue Requirement
Developer Reimbursements	18,500	1,786	1,745	20	0	14,837	53	58	0	as Total Revenue Requirement
Other	370	36	35	0	0	297	1	1	0	as Total Revenue Requirement
Non-Operating Revenue	0	0	0	0	0	0	0	0	0	as Total Revenue Requirement
Stand-by Fees	98,050	9,468	9,249	105	0	78,636	283	307	0	as Total Revenue Requirement
Restricted Property Taxes (net of transfer to reserves)	1,641,760	158,539	154,873	1,765	0	1,316,696	4,746	5,140	0	as Total Revenue Requirement
Unrestricted Property Taxes (net of transfer to reserves)	112,315	10,846	10,595	121	0	90,077	325	352	0	as Total Revenue Requirement
Investment Income (allocated to operating)	47,000	4,539	4,434	51	0	37,694	136	147	0	as Total Revenue Requirement
Other:	0	0	0	0	0	0	0	0	0	as Total Revenue Requirement
Power Sales, North Fork	407,592	39,360	38,450	438	0	326,890	1,178	1,276	0	as Total Revenue Requirement
Power Sales, New Hogan	129,500	12,505	12,216	139	0	103,859	374	405	0	as Total Revenue Requirement
Grants/OES Reimbursements	0	0	0	0	0	0	0	0	0	100% (COM)
Sale of Surplus Equipment	0	0	0	0	0	0	0	0	0	100% (COM)
Copies	0	0	0	0	0	0	0	0	0	100% (COM)
Misc. Operating Revenue	11,100	11,100	0	0	0	0	0	0	0	100% (COM)
Other District Reimbursements	7,400	7,400	0	0	0	0	0	0	0	100% (COM)
Rental Income per schedule	60,192	60,192	0	0	0	0	0	0	0	100% (COM)
Total Other Income	**$2,949,849**	**$564,706**	**$249,049**	**$2,838**	**$0**	**$2,117,357**	**$7,632**	**$8,266**	**$0**	
Net Revenue Requirements	**$11,266,480**	**$808,117**	**$1,092,031**	**$12,444**	**$0**	**$9,284,177**	**$33,465**	**$36,245**	**$0**	

Calaveras County Water District
Water Utility - 300
Cost of Service Summary
Exhibit 7 - Allocation by Component - COM, CAP & DA

		Residential				Commercial				Multifamily				Irrigation/Other			
	2018-19	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4
Commodity	$808,117	$262,830	$313,808	$71,030	$35,108	$70,635	$0	$0	$0	$6,833	$0	$0	$0	$47,874	$0	$0	$0
Capacity	$1,092,031	$273,381	$354,864	$136,202	$80,815.55	$123,063	$0	$0	$0	$11,904	$0	$0	$0	$111,801	$0	$0	$0
Direct Assignment	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total	**$1,900,148**	**$536,211**	**$668,672**	**$207,232**	**$115,924**	**$193,698**	**$0**	**$0**	**$0**	**$18,737**	**$0**	**$0**	**$0**	**$159,675**	**$0**	**$0**	**$0**

Calaveras County Water District
Water Utility - 300
Cost of Service Summary
Exhibit 7 - Allocation by Component

Classification Components	2018-19	Residential	Commercial	Multifamily	Irrigation/ Other	*Allocation Factor*
Commodity	$808,117	$682,776	$70,635	$6,833	$47,874	(COM)
Capacity	$1,092,031	$845,262	$123,063	$11,904	$111,801	(CAP)
Customer Related						
Actual Customer	$12,444	$11,984	$399	$10	$51	(AC)
Cust. Acctg.	0	0	0	0	0	(WCA)
Meters & Services	9,284,177	8,676,801	498,260	32,358	76,758	(WMCS)
Total Customer Related	$9,296,621	$8,688,785	$498,659	$32,368	$76,809	
Public Fire	$33,465	$31,849	$1,590	$27	$0	(PF)
Revenue Related	$36,245	$32,939	$2,312	$167	$827	(RR)
Direct Assignment	$0	$0	$0	$0	$0	(DA)
NET REVENUE REQUIREMENT	**$11,266,480**	**$10,281,611**	**$696,258**	**$51,299**	**$237,312**	

Exhibit 7 - Summary of Cost Allocation

	2018-19 Total	Residential	Commercial	Multifamily	Irrigation/ Other	*Source*
Rate Revenue	$11,078,151	$10,067,488	$706,568	$51,183	$252,912	
Total Revenue	$11,078,151	$10,067,488	$706,568	$51,183	$252,912	
Allocated Revenue Requirement	$11,266,480	$10,281,611	$696,258	$51,299	$237,312	
Subtotal Balance/(Deficiency) of Funds	($188,329)	($214,123)	$10,310	($116)	$15,601	
% Change Over Present Rates	**1.7%**	**2.1%**	**-1.5%**	**0.2%**	**-6.2%**	

Calaveras County Water District
Water Utility - 300
Cost of Service Summary
Exhibit 7 - Average Unit Cost

		Residential				Commercial				Multifamily				Irrigation/Other			
	2018-19	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4	Tier 1	Tier 2	Tier 3	Tier 4
Commodity	$0.53	$0.53	$0.53	$0.53	$0.53	$0.53				$0.53				$0.53			
Capacity	0.72	0.56	0.60	1.02	1.23	0.93				0.93				1.25			
Direct Assignment	0.00	0.00	0.00	0.00	0.00	0.00				0.00				0.00			
	$1.26	$1.09	$1.14	$1.56	$1.76	$1.47	$0.00	$0.00	$0.00	$1.47	$0.00	$0.00	$0.00	$1.78	$0.00	$0.00	$0.00
			$0.05	$0.42	$0.21												
Proposed Rate Option		$0.81	$1.06	$1.39	$1.82	$1.73				$1.73							
Current Rates (Sept. 2017)		$0.00	$1.44	$1.80	$2.30	$0.00	$1.44	$1.80	$2.30	$0.00	$1.44	$1.80	$2.30	$0.00	$1.44	$1.80	$2.30
				$0.36	$0.50												
Customer Related																	
$/Actual Cust./2 mo.	$0.15	$0.15				$0.09				$0.03				$0.07			
$/Weighted Cust./2 mo.	0.00	0.00				0.00				0.00				0.00			
$/Meters and Service/2 mo.	111.24	111.24				111.24				111.24				111.24			
$/Fire Protection/2 mo.	0.40	0.41				0.35				0.09				0.00			
$/Revenue Related/2 mo.	0.43	0.42				0.52				0.58				1.20			
Tier 1 Costs/2 mo.	0.00	0.00				0.00				0.00				0.00			
	$112.23	$112.23				$112.20				$111.95				$112.52			
		$114.90															
Current Rates 5/8" (Sept. 2017)		$113.56				$113.56				$113.56				$113.56			
Basic Data																	
Consumption	1,511,838	491,706	587,077	132,884	65,681	132,145	0	0	0	12,783	0	0	0	89,563	0	0	0
No. of Customers	13,458	12,960				431				11				56			

DRAFT FINAL REPORT



Calaveras County Water District

Sewer Rate Study

April 2018

April 15, 2018

Mr. Jeffrey Meyer
Director of Administrative Services
Calaveras County Water District
120 Toma Court
P.O. Box 846
San Andreas, California 95249

Subject: Comprehensive Sewer Rate Study Report

Dear Mr. Meyer:

HDR Engineering, Inc. (HDR) is pleased to present to the Calaveras County Water District (District) the draft final report for the 2017 comprehensive sewer rate study. The District's comprehensive study was developed to provide a financial plan and rates that generate sufficient revenue to fund the operating and capital needs of the sewer utility. More specifically, the study was designed to develop cost-based and equitable sewer rates for the District's customers. This report outlines the overall approach used to achieve these objectives, along with our findings, conclusions, and recommendations.

The District owns and operates the sewer system. It conveys and treats wastewater generated within the District's service area. The costs associated with providing sewer service to the District's customers has been developed based on the District's sewer system data and information and is discussed in more detail within this report. This study was developed utilizing generally accepted sewer industry rate setting principles and methodologies. This report provides the basis for developing and implementing sewer rates which are cost-based, equitable, and legally defensible to the District's customers.

We appreciate the assistance provided by the District's project team in the development of this study. More importantly, HDR appreciates the opportunity to provide these technical and professional services to Calaveras County Water District.

Sincerely yours,
HDR Engineering, Inc.

Shawn Koorn
Associate Vice President

hdrinc.com

929 108th Ave NE, Suite 1300, Bellevue, WA 98004
T 425-450-6200

Table of Contents

Executive Summary

Introduction

HDR was retained by the Calaveras County Water District (District) to conduct a comprehensive sewer rate study. The main objectives of the study were:

- Review the District's previously adopted sewer rates which were adopted through the Proposition 218 process.
- Develop a financial plan for projecting operating and capital costs for the sewer utility for planning purposes.
- Provide the framework and methodology, based on generally accepted industry best practices, for the development of cost-based sewer rates.

The District owns and operates several collection and treatment systems throughout the District's service area. The District is independent from the County government but rather is governed by an elected five member board. There are nine treatment plant within five areas including Ebbetts Pass, Copperopolis, Valley Spring, West Point and Wallace. While these systems are isolated, they are operated as one system with the same rates regardless of the service area. In total the District serves approximately 4,848 connections and the sewer service area differs from their water service area. In total the collection system is comprised of 130 miles of gravity and force mains and 49 lift stations.

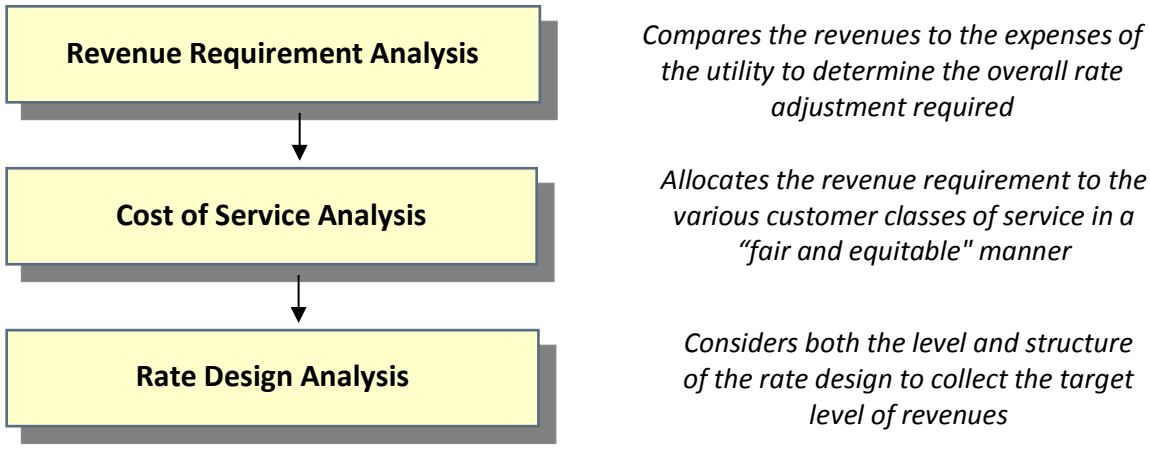
> ***"There are nine treatment plant within 5 areas including Ebbetts Pass, Copperopolis, Valley Spring and West Point. "***

The costs associated with providing sewer services to the District's sewer customers has been developed based on information provided by District and it has been utilized in the development of the proposed sewer rates.

Overview of the Rate Study Process

A comprehensive rate study uses three interrelated analyses to address the adequacy and equity of the utility's rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. These three analyses are illustrated below in Figure ES - 1.

Figure ES – 1
Overview of the Comprehensive Sewer Rate Analyses



Shown above is the basic analytical framework that was utilized in the development of this study for reviewing and evaluating the District's sewer rates.

Summary of the Sewer Revenue Requirement Analysis

A revenue requirement analysis is the first analytical step in the comprehensive sewer rate study process. This analysis determines the adequacy of the current rates to fund annual operating expenses and capital improvement needs. From this analysis, a determination can be made as to the overall level of sewer rate (revenue) adjustments needed to provide adequate and prudent funding for the District's sewer system.

As a practical matter, a multi-year time frame is recommended in an attempt to identify and plan for any major expenses that may be on the horizon. By anticipating future financial requirements, the District can begin planning for these changes sooner, thereby minimizing short-term rate impacts while also stabilizing long-term rates.

For the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most commonly methodology used by municipal and special district utilities to set their revenue requirement and in its most basic form, it is composed of O&M expenses, taxes / transfer payments, annual debt service payments, and rate funded capital projects. The primary inputs for the District's revenue requirement analysis were obtained from the District's budget documents, the historical billed customer data, and the sewer capital improvement plan. Budgeted O&M expenses were projected using inflationary factors for the District's various expenses to provide sewer collection and treatment services over the projected time period.

The proper and adequate funding of capital projects is important to help maintain existing facilities, provide consistent levels of service and minimize rate impacts over time. A general

financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through current rate revenue. Annual depreciation expense reflects the current investment in plant being depreciated or "losing" its useful life. Therefore, this portion of plant investment needs to be replaced or repaired to maintain the existing level of infrastructure (and service levels). However, it must be kept in mind that, in theory, annual depreciation expense reflects an investment in infrastructure that was placed in service an average of 15 years ago, assuming a 30-year useful (i.e., depreciable life). It is important to note and understand that depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds the sewer utilities' share of depreciation expense is reasonable and appropriate target to aspire to as the utility becomes more fiscally sound. In developing this financial plan, HDR and the District have attempted to minimize rate impacts while funding the planned capital improvement projects.

To address the system capital funding needs the District has created a Renovation & Replacement (R&R) fund and defined a component of their rate that is specifically designated for capital needs. This component of the rate is referred to as the Renovation & Replacement rate, or R&R rate and is approximately 20% of the overall rate and is held in R&R fund separate from the operations fund. This rate was established in the last rate study which revealed a critical deficiency of available funds for capital projects. As this study has progressed it was decided that this study would focus on operational needs and keeping the R&R component at its current level. The sewer systems annual depreciation expenses is approximately $1.2 million which, also is approximately equal to the amount of revenue collected from the R&R component of the Districts sewer rates.

The District also maintains Expansion Funds for each of their service areas which are funded from connection fees for use on expansion type projects.

In the past the District has utilized debt to finance capital projects. While this funding mechanism is an option for the District, no debt was assumed during the analysis period.

The District has received grants in the past and has assumed projects in its capital plan that are wholly or partially funded from grants.

Shown below in Table ES – 1 is a summary of the capital improvement plan for the projected five-year review period.

ES – 1 Overview of the Sewer Capital Improvement Plan ($000s)					
Description	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Wallace - Plant Renovations/SCADA/Electrical	$200	$0	$0	$0	$0
Vallecito - Title 22 / TSTAN Project	140	0	0	0	0
Vallecito - I&I Equalization Improvements	200	0	0	0	0
Copper Cove - Pond 6 Enlargement/Expansion	1,000	4,200	0	0	0
West Point - Wilseyville Consolidation Grant	2,500	2,000	0	0	0
Poker Flat - Lift Station 8, 12 & 13 Bypass	1,000	200	0	0	0
Lake Tulloch - Lift Station 15 & 18 Renovations	500	200	0	0	0
Various - Pipeline/Force main Replacement	75	75	0	0	0
Total Capital Outlays	**$5,615**	**$6,675**	**$0**	**$0**	**$0**
Funding Sources					
R&R Funds	**$1,448**	**$2,342**	**$0**	**$0**	**$0**
Expansion Funds	**1,417**	**2,333**	**0**	**0**	**0**
Grant Funds	**2,590**	**2,000**	**0**	**0**	**0**
Other Funding	**160**	**0**	0	0	0
Total Funding	**$5,615**	**$6,675**	**$0**	**$0**	**$0**

As shown in Table ES-1, the District's Capital Improvement Plan are a combination of renovation and replacement and expansion projects. The current plan does not have projects beyond 2020-21 so the funds designated for R&R projects are placed in the R&R fund for projects to be designated at a later date.

Given the projection of O&M and capital improvement funding, the sewer revenue requirement analysis was completed. Table ES - 2 provides a summary of the revenue requirement for the District's sewer utility.

Table ES - 2 Summary of the Revenue Requirement Analysis (000's)							
	Budget		Projected				
	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Sources of Funds							
Rate Revenue[1]	$5,485	$5,476	$5,531	$5,586	$5,642	$5,698	$5,755
Other Revenues	892	932	934	949	965	981	996
Total Sources of Funds	$6,377	$6,408	$6,465	$6,535	$6,607	$6,679	$6,751
Applications of Funds							
Total O&M Expenses	$6,109	$5,872	$5,724	$5,858	$6,038	$6,224	$6,416
CIP from Rates	1,166	1,176	1,188	1,200	1,212	1,224	1,236
Debt Service	479	541	682	618	618	221	221
Change Working Capital	(643)	(841)	(902)	(674)	(539)	4	159
Total Applications of Funds	$7,112	$6,748	$6,691	$7,003	$7,330	$7,673	$8,032
Balance/(Deficit) Funds	($734)	($341)	($227)	($467)	($723)	($994)	($1,281)
Cumulative Bal./(Def.) of Rates	13%	6%	4%	8%	13%	17%	22%
Proposed Adjustment	0.0%	0.0%	4.1%	4.1%	4.1%	4.1%	4.1%
Add'l Revenue with Rate Increase	$0	$0	$227	$467	$723	$994	$1,281

[1] Rate Revenue includes both R&R and Operational Rate Components.

As can be seen above, the revenue requirement has summed the O&M, taxes / transfers, rate funded capital, net debt service, and the change in working capital. The total revenue requirement is then compared to the total sources of funds which include the sewer rate revenues, at present rate levels, and other miscellaneous sewer revenues. From this comparison a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the rate revenues to determine the level of rate adjustment needed to meet the revenue requirement.

"During the projected time period, the District's rates appear to be deficient for FY 2019 through FY 2023."

During the projected time period, the District's rates appear to be deficient for FY 2019 through FY 2023. The total overall deficiency is approximately 22%. To address that deficiency, annual sewer rate adjustments are proposed for FY 2019 through FY 2023 as outlined in the table above.

A more detailed discussion of the development of the revenue requirement analysis can be found in Section 3.2. Detailed technical exhibits of the sewer revenue requirement analysis have been included within the Technical Appendices.

Summary of the Sewer Cost of Service Analysis

A cost of service analysis determines the equitable allocation of the revenue requirement to the various customer classes of service (i.e., residential and non-residential, etc.). The objective of the sewer cost of service analysis is different from determining the sewer revenue requirement analysis. A revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the fair and equitable (i.e., proportional) manner to collect the overall total revenue requirement. For the District's study, the cost of service was performed with an assumed 4.1% rate adjustment. This means that in total the rate revenue will increase 4.1% while individual customer classes may increase or decrease at a rate greater or less than the overall rate adjustment shown in the revenue requirement.

In summary form, the sewer cost of service analysis began by functionalizing the revenue requirement for the sewer system. Functionalizing the data sorts it into major functions (e.g., power, materials, treatment, administrative, etc.). Functionalization of the data was accomplished via the District's system of accounting. The functionalized sewer revenue requirement was then classified into their various cost components (volume, strength, customer-related). The individual classification totals were then equitably allocated to the various customer classes of service based on the appropriate and proportional allocation factors. The allocated expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. These steps follow generally accepted industry methodologies and are outlined in the Water Environment Federation Manual of Practice No. 27, *Financing and Charges for Wastewater System*. Shown below in Table ES - 3 is a summary of the sewer cost of service analysis results by customer class of service.

Table ES - 3
Summary of the Cost of Service Analysis for 2019 ($000's)

Customer Class	Present Rate Revenue (FY 2019-20)	Allocated Revenue Requirement	Bal. / (Def.) of Funds	Required % Change in Rates
Residential	$4,751	$4,961	($209)	4.4%
Non-Residential	779	797	(18)	2.3%
Total	$5,531	$5,758	($227)	4.1%

The above results indicate that residential should go up by 4.4% and Non-residential should go up 2.3%. Overall these results are very close and indicate that cost to serve residential is relatively close to the cost to serve non-residential. This close relationship is because there is not a significant difference in wastewater strength as well as non-residential being charged on a Single Family equivalent (SFDE) basis. As the name indicates SFDE is a process of billing that expresses non-residential customers as a multiple of an average single family unit. The multiple assigned to a non-residential is multiplied by the base rate to arrive at the customer's monthly bill. It is important to note that a cost of service study is an analysis of a point in time and the District's costs, customer consumption patterns and total usage change over time. In that

respect, a cost of service is a static analysis of a dynamic and ever-changing situation. If the customer based were to change to, say, higher strength wastewater that would effect the cost of service calculation.

While Table ES – 3 summarized the results of the sewer cost of service analysis by customer class of service, the cost of service analysis also contains sufficient detail to understand costs by fixed charges and by consumptive use. These unit costs, or cost-based rates, form the basis for the final proposed sewer rates by customer class of service. The Technical Appendices contains the various exhibits associated with the District's cost of service analysis.

Summary of the Sewer Rate Designs

The final step of the comprehensive sewer rate study process is the design of the sewer rates to collect the appropriate levels of revenue. The appropriate levels of revenue have been determined based on the results of the revenue requirement and cost of service analysis. The revenue requirement analysis provided a set of recommendations related to annual rate adjustments, while the cost of service results indicated that minor interclass adjustments were needed at this time.

Provided below in Table ES – 4 are the present and proposed sewer rates for the District. This study has not recommended any changes to the overall rate structure. However, the relationships between classes of services were adjusted to reflect their relative cost of services.

Table ES-4
Current and Proposed Rates

	Present Rates	2018-19	2019-20	2020-21	2021-22	2022-23
Service Charge (Bi-Monthly)						
Residential	$172.32	$179.92	$187.24	$194.78	$202.58	$210.64
Non-Residential (per ERU)	172.32	176.25	183.38	190.74	198.33	206.18

As can be seen, the District has two rate schedules; residential, and Non-Residential. The rate structure is composed of a fixed monthly charge for both residential and non-residential customers. Section 4 of this study provides a more detailed discussion of the present and proposed sewer rates.

Summary of the Sewer Rate Study

This completes the overview of the development of the comprehensive sewer rate study for the District. The focus of this study has been the prudent and adequate funding of the District's sewer utility, along with the development of equitable and cost-based sewer rates by customer class of service. A full and complete discussion of the development of the District's comprehensive sewer rate study and the proposed sewer rates can be found in the following sections and exhibits of this report.

1. Introduction and Overview

1.1 Introduction

HDR was retained by the Calaveras County Water District (District) to conduct a comprehensive sewer rate study. The objective of the study was to review the District's operating and capital costs in order to develop a financial plan and cost-based rates for the District's sewer customers. This study determined the adequacy of the existing sewer rates and provides the framework and cost-basis for any needed future sewer rate adjustments.

The District owns and operates several collection and treatment systems throughout the District's service area. The District is independent from the County government and is governed by an elected five member board. There are nine treatment plant within five areas including Ebbetts Pass, Copperopolis, Valley Spring, West Point and Wallace. While these systems are isolated, they are operated as one system with the same rates regardless of the service area. In total the District serves approximately 4,848 connections and the sewer service area differs from their water service area. In total the collection system is comprised of 130 miles of gravity and force mains and 49 lift stations.

The State of California has certain well established legal constraints regarding utility ratemaking, of which California Constitution article XIII D, section 6 (commonly referred to as "Proposition 218")[1] is at the forefront. At its very core, Proposition 218 requires a sewer (and water) utility to establish cost-based rates for the services provided.

"At its very core, Proposition 218 requires a sewer utility to establish cost-based rates for the services provided."

This study has been designed and intended to comply with the legal requirements of Proposition 218, as they are currently understood. This study has been developed using industry accepted sewer rate setting methodologies and best practices, along with District specific sewer system data and information.

1.2 Goals and Objectives

The District had a number of key objectives in developing the sewer rate study. These key objectives provided a framework for policy decisions in the analysis that follows. These key objectives were as follows:

- Develop the sewer study in a manner that is consistent with the principles and methodologies established by the Water Environment Federation (WEF), Manual of Practice No. 27, Financing and Charges for Sewer Systems.

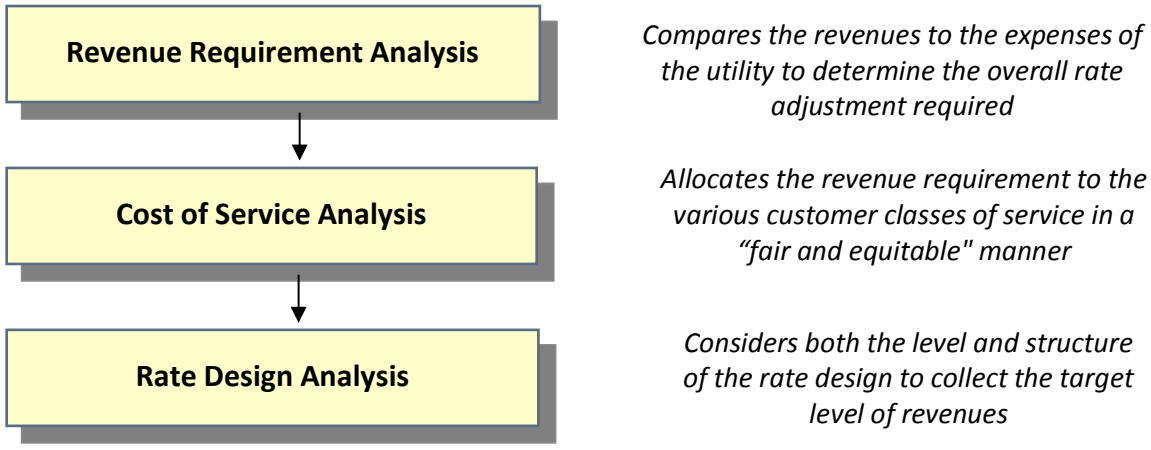
[1] Proposition 218, enacted by California's voters in 1996, imposes certain procedures, requirements and voter approval mechanisms for local government assessments, fees and charges.

- In financial planning and establishing the District's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the District's sewer system and facilities.
- Review the District's rates utilizing "generally accepted" rate making methodologies to determine adequacy and equity of the utility rates.
- Meet the District's financial planning criteria and goals, such as debt service coverage ratios, adequate funding of capital infrastructure, and maintenance of adequate and prudent reserve levels.
- Develop a final proposed financial plan which adequately supports the sewer utility's funding requirements, while attempting to minimize overall impacts to rates.
- Provide rates designed to meet the legal requirements of Article XIII D and recent legal decisions related to Article XIII D.
- Develop proposed rates that are cost-based reflective of the District's specific costs.

1.3 Overview of the Rate Study Process

User rates must be set at a level where a utility's operating and capital expenses are met with the revenues received from customers. This is an important point, as failure to achieve this objective may lead to insufficient funds to maintain system integrity. To evaluate the adequacy of the existing sewer rates, a comprehensive rate study is often performed. A comprehensive rate study consists of three interrelated analyses. Figure 1 - 1 provides an overview of these analyses.

Figure 1 – 1
Overview of the Comprehensive Sewer Rate Analyses



The study conducted by HDR included the three technical analyses discussed above. In establishing cost-based rates, the revenue requirement analysis determines the overall revenue needs of the utility. Next, the cost of service analysis provides an equitable allocation of the costs to the different types of customers served, while also providing per unit costs which become the cost-basis for the final rate designs. Finally, the rate design analysis utilizes the average unit costs

from the cost of service analysis to establish the revised cost-based rates. Each of these elements of the technical analysis is discussed in more detail within this report.

1.4 Organization of the Study

This report is organized in a sequential manner that first provides an overview of utility rate setting principles, followed by sections that detail the specific steps used to review the District's sewer rates. The following sections comprise the District's sewer cost of service study report:

- Section 2 – Overview of Rate Setting Principles
- Section 3 – Development of the Revenue Requirement Analysis
- Section 4 – Development of the Cost of Service Analysis
- Section 5 – Development of the Proposed Sewer Rate Designs

Technical Appendices are attached at the end of this report which details the various technical analyses that were undertaken in the preparation of this study.

1.5 Summary

This report will review the various technical analyses undertaken by HDR and the District to review their current sewer rates. The objective of this study is to develop cost-based sewer rates which are compliant with the legal requirements of Proposition 218, as it is currently understood.

2. Overview of Rate Setting Principles

2.1 Introduction

This section of the report provides background information about the sewer rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining a revenue requirement, the cost of service analysis, and rate design. This information is useful for gaining a better understanding of the details presented later in this report.

2.2 Generally Accepted Rate Setting Principles

As a practical matter, all utilities should consider setting their rates around some generally accepted or global principles and guidelines. Utility rates should be:

- Cost-based, equitable, and set at a level that meets the utility's full revenue requirement.
- Easy to understand and administer.
- Designed to conform to "generally accepted" rate setting techniques.
- Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements.
- Established at a level that is stable from year-to-year from a customer's perspective.

2.3 Determining the Revenue Requirement

Most public utilities use the "cash basis" approach for establishing their revenue requirement and setting rates. This approach conforms to most public utility budgetary requirements and the calculation is easy to understand. A public utility totals its cash expenditures for a period of time to determine required revenues. The revenue requirement for a public utility is usually comprised of the following costs or expenses:

- **Total Operating Expenses:** This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments. Operation and maintenance expenses include the materials, electricity, labor, supplies, etc., needed to keep the utility functioning.
- **Total Capital Expenses:** Capital expenses are calculated by adding debt service payments (principal and interest) to capital improvements financed with rate revenues. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes depreciation expense to stabilize the annual revenue requirement.

Under the "cash basis" approach, the sum of the total O&M expenses plus the total capital expenses equals the utility's revenue requirement during any selected period of time (historical or projected).

Note that the two portions of the capital expense component (debt service and rate funded capital) are necessary under the cash basis approach because utilities generally cannot finance all their capital facilities with long-term debt. At the same time, it is often difficult to pay for

capital expenditures on a "pay-as-you-go" basis given that some major capital projects may have significant rate impacts upon a utility, even when financed with long-term debt. Many utilities have found that some combination of pay-as-you-go funding and long-term financing will often lead to minimization of rate increases over time.

Public utilities typically use the "cash basis"[2] approach to establish their revenue requirements. An exception occurs if a public utility provides service to a wholesale or contract customer. In that situation, a public utility could use the "utility basis" approach (see Table 2 - 1) regarding earning a fair return on its investment.

Table 2 – 1
Cash versus Utility Basis Comparison

	Cash Basis		Utility Basis (Accrual)
+	O&M Expenses	+	O&M Expenses
+	Taxes/Transfer Payments	+	Taxes/Transfer Payments
+	Capital Improv. Funded From Rates (≥ Depreciation Expense)	+	Depreciation Expense
+	Debt Service (Principal + Interest)	+	Return on Investment
=	Total Revenue Requirement	=	Total Revenue Requirement

For purposes of this discussion, the District has utilized the cash basis methodology for the establishment of the revenue requirement analysis. Of these two generally accepted methodologies, the use of the cash basis methodology for the District is the most appropriate.

2.4 Analyzing Cost of Service

After the total revenue requirement is determined, it is equitably allocated to the users of the service. The allocation, usually analyzed through a cost of service analysis, reflects the cost relationships for providing sewer services. A cost of service analysis requires three analytical steps:

1. Costs are ***functionalized*** or grouped into the various cost categories related to providing service (collection, treatment, etc.). This step is largely accomplished by the utility's accounting system.
2. The functionalized costs are then ***classified*** to specific cost components. Classification refers to the arrangement of the functionalized data into cost components. For example, a utility's sewer costs are typically classified as volume, strength, or customer-related.

[2] "Cash basis" as used in the context of rate setting is not the same as the terminology used for accounting purposes and recognition of revenues and expenses. As used for rate setting, "cash basis" simply refers to the specific cost components to be included within the revenue requirement analysis.

3. Once the costs are classified into components, they are proportionally ***allocated*** to the customer classes of service (e.g., residential and non-residential). The allocation is based on each customer class' proportional contribution to the cost component (i.e., benefits received from, and burdens placed on the system and its resources). For example, customer-related costs are allocated to each class of service based on the total number of customers in that class of service. Once costs are allocated, the revenues from each customer class of service required to achieve cost-based rates can be determined.

At the conclusion of the cost of service analysis, two key pieces of information are provided. First, the cost of service provides an understanding of the total revenues to be collected from each class of service. In other words, assuming the sewer revenue requirement is $6.7 million the cost of service provides an equitable method to assign that total cost between the various sewer customer classes of service (e.g., residential and non-residential). The other important piece of information provided by the cost of service analysis is the average unit costs. Average unit costs are the allocated costs divided by the appropriate usage. This provides an understanding of the cost on a $/customer/month and $/hundred cubic feet (100 CF)[3] basis. These average unit costs are essentially the cost-based sewer rates. While the District does not charge its customers on a volumetric basis, the generally accepted cost of service methodology allocates costs on wastewater volume and characteristics which results in a per-unit cost per hundred cubic feet. Understanding the differences in customer costs on a volume basis provides insight into how customers utilize the system and the costs the utility incurs to service customers.

2.5 Designing Utility Rates

Rates that meet the utility's objectives are designed based on the findings and conclusions from both the revenue requirement and cost of service analysis. This approach results in rates that are strictly cost-based and does not consider other non-cost based goals and objectives (economic development, ability to pay, revenue stability, etc.). In designing rates, factors such as revenue stability, continuity of past rate philosophy, ease of administration, and customer understanding may typically be taken into consideration. However, in order to meet the legal requirements of Proposition 218, the rates must take into consideration each customer class's proportional share of costs allocated through the cost of service analysis. Given this, the utility's ability to take goals and objectives other than cost-based is limited. However, in the design of the rate structure, the utility's goals and objectives can frame the approach for setting cost-based rates.

2.6 Economic Theory and Rate Setting

One of the major justifications for a comprehensive cost of service study is founded in economic theory. Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained. This statement's implications on utility rate designs are significant. For example, a sewer utility usually incurs strength-related costs to treat wastewater. It

"Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained."

[3] A 100 CF = one-hundred cubic feet. One (1) 100 CF of water = 748 gallons of water

follows that the customers who have high strength wastewater and create the need for greater treatment to address the strength of the wastewater should proportionally pay a higher rate to address the strength of their wastewater. When costing and pricing techniques are refined, consumers have a more accurate understanding of what the commodity costs to produce and deliver. This price-equals-cost concept provides the basis for the subsequent analysis and comments.

2.7 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set sewer rates. These principles and techniques will become the basis for the District's comprehensive cost of service study.

3. Development of the Revenue Requirement Analysis

3.1 Introduction

This section describes the development of the revenue requirement analysis for the District's sewer system. The revenue requirement analysis is the first analytical step in the comprehensive rate study process. From this analysis a determination can be made as to the overall level of rate adjustments needed to provide adequate and prudent funding for both operating and capital needs of the sewer utility. The prior section of the report provided an overview of the general approach and methodology to be used within this portion of the analysis.

3.2 Development of the Sewer Revenue Requirement Analysis

There are a number of steps associated with the development of the sewer revenue requirement analysis. In developing the District's sewer revenue requirement, the utility must financially "stand on its own" and be properly funded. Setting up the sewer utility to stand on its own has been the primary focus of this study since costs have risen faster than revenue leaving the sewer utility unable to fully cover its operations and maintenance costs. For this study sewer rates have been increased over the 5 year period to a level to fully fund operations. To allow the rates to be evenly phased in over time a loan from the water fund was used to cover short fall and will be paid back over a 10 year period. Provided below is a more detailed discussion of the development of the sewer revenue requirement analysis for District.

"... the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the District's sewer system on a financially sound and prudent basis. "

3.2.1 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the District's sewer system was to establish a time frame for the revenue requirement analysis. The review of the five year period of FY 2018-19 through FY 2022-23 was determined to be an appropriate time period for the analysis and financial plan. The financial plan was developed based on the District's FY 2018 budget and capital plan. Reviewing a multi-year time period is recommended since it attempts to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the District can then begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized. As noted in Section 2, the "cash basis" approach or methodology is the most commonly used methodology by municipal and special district utilities to set their revenue requirement. This is also the methodology that the District has historically used to establish their sewer revenue requirements. Table 3 - 1 provides a summary of the "cash basis" approach and cost components used to develop the District's sewer revenue requirement.

Table 3 – 1
Overview of the District's "Cash Basis" Sewer Revenue Requirements

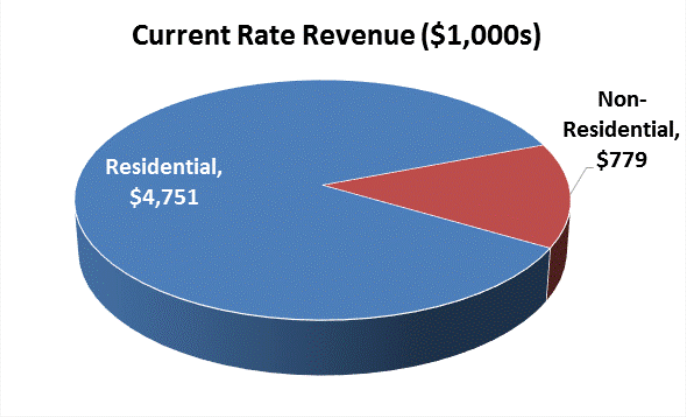
+	Sewer Operation and Maintenance Expenses
	✓ Power Costs
	✓ Administrative Expenses
	✓ Materials and Maintenance (includes Metro O&M)
	✓ Labor and Benefits
+	Taxes and Transfers
+	Rate Funded Capital
+	Debt Service (P + I) – Existing and Future
±	To / (From) Reserves
=	Total Sewer Revenue Requirement
–	Miscellaneous Revenues
=	Net Revenue Requirement (Balance Required from Rates)

Given a time period around which to develop the revenue requirement and a method to accumulate the costs; the focus shifts to the development and projection of the revenues and expenses of the District's sewer system.

The primary financial inputs in the development of the revenue requirement were the District's current budget documents, customer billing data, and capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the District's sewer revenue requirement analysis.

3.2.2 Projection of Rate and Other Miscellaneous Revenues

The first step in developing the District's sewer revenue requirement was to develop a projection of the sewer rate revenues, at the present rate levels. In general, this process involved developing projected billing units for each customer group (rate schedule). The billing units (accounts and billed volumes) for each customer group were then multiplied by the corresponding sewer rates. This method of independently calculating revenues links the projected revenues used within the analysis to the projected billing units. Additionally, it aids in confirming that the billing units used within the study are reasonable for purposes of projecting future revenues, allocating costs, and ultimately establishing the proposed rates. For FY 2018, it is calculated that the District will receive approximately $5.5 million in rate revenues for the sewer utility, with



the vast majority of those revenues being received from the residential customer class of service. With assumed customer growth on the system, by FY 2022-23, rate revenues are projected to increase to approximately $5.8 million.

In addition to rate revenues, the District also receives other revenue ranging from $930,000 in 2018-19 to $1 million in 2022-23. This revenue includes other fees, non-operating revenue and other miscellaneous revenue sources. The bulk of this revenue comes from two sources, property tax and power sales. Property tax revenue is the largest component of the other revenue at approximately $600,000 per year. Power sales from the North Fork and New Hogan hydroelectric projects operated by the District is expected to be approximately $200,000 per year throughout the analysis period. The remainder of the other revenue is less substantial and consists of several smaller revenue items including account establishment fees and delinquency fees.

In total, including rate and miscellaneous revenue sources, the sewer utility is projected to collect approximately $6.5 million in total revenues in FY 2018-19. The total revenues are projected to increase slightly over time and be approximately $6.8 million by FY 2022-23.

3.2.3 Projection of Operation and Maintenance Expenses

Operation & maintenance (O&M) expenses are incurred by the District to perform the daily operations & maintain the sewer collection and treatment systems. While from a customer perspective the rate appears to a single bi-monthly charge, the District's rate is actually two components, an O&M component and a renovation & replacement (R&R) component.

The starting point for the projection of the District's sewer O&M expenses was the District's budget. Budgeted O&M expenses were projected over the rate study time period based on both historical inflationary factors and known future inflationary factors. These factors took into consideration the District's historical cost increases and projected increases. Depending upon the specific cost, the escalation factors for each year ranged from 1.0% to 7.0% for the various types of expenses (e.g., labor, benefits, and materials). With the various escalation factors used being higher or lower depending on the type of expense, the resulting overall average O&M increase was approximately 3%.

"A major O&M expense for the District is wastewater treatment from Metro."

O&M consists of three main categories, Administrative – General, Maintenance Expense and Minor capital outlays. Over half of the total O&M costs were in the Administrative and General category which consisted of salaries and benefits, ranging from $3.4 million in 2018-19 to $3.8 million in 2022-23. Maintenance Expense is the cost category that contains the non labor type costs such as utilities, chemicals, vehicle expense, federal, state and county water and sewer fees among other smaller costs. Maintenance costs range from $2.2 million in 2018-19 to $2.4 million in 2022-23. Capital outlays is a small category that contains funding for small capital costs such as vehicle and equipment costs ranging from $185,000 in 2018-19 to $220,000 in 2022-23.

In total the utilities O&M expenses are growing at approximately 3% ranging from $5.7 million in 2018-19 to $6.4 million in 2022-23.

3.2.4 Projection of Taxes and Transfer Payments

The District's sewer utility does not pay taxes or payment in lieu of taxes (PILOT) to any other governmental entity. The District does have several transfer payments made to and from the operating fund. These transfers consist of transfers to the operations from fund 108 and the R&R fund to cover portions of the debt service and add to or transfer excess revenue to the Operating fund.

There are however several transfers between the operating fund to cover revenue shortfalls or to transfer excess revenue, R&R fund and Fund 108 to pay for some debt service.

3.2.5 Projection of Capital Improvement Funding Needs

Capital improvements are funded in a variety of ways but primarily by the R&R component of the rate. Based on present rates the R&R rate comprises approximately 20% of the total sewer rates. CIP Projects other than R&R projects are funded from the expansion funds or through the use of grants.

In general, there are three types of capital projects that the District may need to fund. These include the following types:

- Renovation and replacement projects
- Expansion projects
- Regulatory-related projects

An R&R project is essentially maintaining the existing system that is in place today. As the existing plant becomes worn out, obsolete, etc., the District should be making continuous investments to maintain the integrity of its sewer facilities. In contrast to this, the District may make capital investments to expand the capacity of facilities to accommodate future customers. Finally, certain projects may be a function of a regulatory requirement in which the Federal and / or State government mandates the need for an improvement to the system to meet a regulatory standard.

In contrast to this, expansion projects may be funded through the collection of a connection fee (i.e., growth-related charges) in which new development pays a proportional and equitable share of the cost of improvements required as a result of their connection (impact).

The District has separate expansion funds to hold connection fees for each of its service areas so that fees are used to fund projects in the area in which they were collected. Finally, regulatory projects may be funded by a variety of different means, which may include rates, long-term debt, grants, etc.

Generally, while the total amount of a project may vary from year to year, the sewer capital funding plan should be developed in an attempt to provide a consistent funding source for the

utility. The District does provide a consistent level of funding for R&R projects since it is funded through a specific component of the sewer rate.

A desirable funding target for rate funded capital is an amount equal to or greater than annual depreciation expense. Depreciation expense reflects the amount of capital infrastructure that is becoming worn out or obsolete. It is important to note and understand that depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds depreciation expense is considered to be both prudent and appropriate target to attain as the utility becomes more fiscally stable.

The District's rates have two parts, an operations component that is approximately 80% of the total rate and an R&R component that is approximately 20% of the total rate. These two components are held in separate accounts, an operating account for the operations component and an R&R Fund for the R&R component so that those costs are used for the purpose they were intended. The total revenue collected through the R&R rate component closely matches the Districts current annual depreciation expense.

HDR and the District have attempted to minimize rate impacts while funding the planned capital improvement projects of the District. To that end the District has decided to focus this study on funding the Districts operations cost. As rates for the operations are increased the R&R amount will remain the same but the proportion will reduce over time.

The balancing of R&R and expansion funds and grant funding provides the District with a method to fund capital over the long-term and minimize rates to the greatest extent possible. Shown below in Table 3 – 2 is summary of the District's capital improvement plan that was used in the development of the sewer revenue requirement.

Table 3-2 Overview of the Sewer Capital Improvement Plan ($000s)					
Description	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Wallace - Plant Renovations/SCADA/Electrical	$200	$0	$0	$0	$0
Vallecito - Title 22 / TSTAN Project	140	0	0	0	0
Vallecito - I&I Equalization Improvements	200	0	0	0	0
Copper Cove - Pond 6 Enlargement/Expansion	1,000	4,200	0	0	0
West Point - Wilseyville Consolidation Grant	2,500	2,000	0	0	0
Poker Flat - Lift Station 8, 12 & 13 Bypass	1,000	200	0	0	0
Lake Tulloch - Lift Station 15 & 18 Renovations	500	200	0	0	0
Various - Pipeline/Force main Replacement	75	75	0	0	0
Total Capital Outlays	**$5,615**	**$6,675**	**$0**	**$0**	**$0**
Funding Sources					
R&R Funds	**$1,448**	**$2,342**	**$0**	**$0**	**$0**
Expansion Funds	**1,417**	**2,333**	**0**	**0**	**0**
Grant Funds	**2,590**	**2,000**	**0**	**0**	**0**
Other Funding	**160**	**0**	0	0	0
Total Funding	**$5,615**	**$6,675**	**$0**	**$0**	**$0**

3.2.6 Projection of Debt Service

The District currently has several debt issues of varying amounts and length for the sewer utility which have funded the Districts past capital program. This analysis is not assuming new debt funding for the capital program at this time. However, a loan from the Water utility was used to fund past and projected cash short falls while the rate in gradually increased to fully fund operation.

3.2.7 Reserve Funding

The final component of the revenue requirement analysis is the change in working capital line item which transfers funds between funds including the R&R, expansion and the Operating fund. Currently the sewer operating fund has a zero balance. Operating funds usually contain unrestricted funds used pay its ongoing obligations such as salaries and other general expenses.

Operating ending fund balance target minimum is often set at a level that provides adequate cash to handle cash fluctuations due to the utilities business cycle. A typical target is 90 days of operations and maintenance expense. Many utilities such as the District collect rate revenue bi-monthly while ongoing expenses are paid monthly and salaries are paid a few times a month. This discrepancy between cash collection and obligations can lead to a cash shortfall during the year if the operation fund is not adequately funded. During the analysis period operating reserve balance fluctuates from year to year but is expected to stabilize at the end of the analysis when the rate transition plan is complete.

3.2.8 Summary of the Sewer Revenue Requirement

Given the above projections of revenues and expenses, a summary of the sewer revenue requirement analysis can be developed. In developing the revenue requirement analysis, consideration was given to the financial planning considerations of the District. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational activities and capital projects throughout the projected time period.

The revenue requirement has summed the O&M, taxes and transfers, rate funded capital, net debt service and the reserve funding. The total revenue requirement is then compared to the total sources of funds which include the rate revenues, at present rate levels, and other miscellaneous revenue sources. From this comparison a balance or deficiency of funds in each year can be evaluated. This balance or deficiency of funds is then compared to the rate revenues to determine the level of rate adjustment needed to meet the revenue requirement (i.e., support cost-based levels). Table 3 – 3 provides a summary of the revenue requirement analysis for the District's sewer utility.

Table3 -3
Summary of the Revenue Requirement Analysis (000's)

	Budget		Projected				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**
Sources of Funds							
Rate Revenue	$5,485	$5,476	$5,531	$5,586	$5,642	$5,698	$5,755
Other Revenues	892	932	934	949	965	981	996
Total Sources of Funds	$6,377	$6,408	$6,465	$6,535	$6,607	$6,679	$6,751
Applications of Funds							
Total O&M Expenses	$6,109	$5,872	$5,724	$5,858	$6,038	$6,224	$6,416
CIP from Rates (R&R Revenue)	1,166	1,176	1,188	1,200	1,212	1,224	1,236
Debt Service	479	541	682	618	618	221	221
Change Working Capital	(643)	(841)	(902)	(674)	(539)	4	159
Total Applications of Funds	$7,112	$6,748	$6,691	$7,003	$7,330	$7,673	$8,032
Balance/(Deficit) Funds	($734)	($341)	($227)	($467)	($723)	($994)	($1,281)
Cumulative Bal./(Def.) of Rates	13%	6%	4%	8%	13%	17%	22%
Proposed Adjustment	0.0%	0.0%	4.1%	4.1%	4.1%	4.1%	4.1%
Add'l Revenue with Rate Increase	$0	$0	$227	$467	$723	$994	$1,281

As can be seen in the above table, the revenue requirement analysis indicates over time, there are deficiencies within the revenue requirement analysis. Over the five-year projected period, and in FY 2023, the District's sewer rates are projected to be deficient by approximately $1.3 million or 22% of the present rates. This implies that over the five-year period rates should be

adjusted by an overall 22%. These deficiencies are caused for the most part due to the overall current deficiency of its operating rate at the beginning of the analysis and the deficiency grows as O&M costs increase due to general inflationary increases.

3.3 Consultant's Revenue Requirement Conclusions and Recommendations

The revenue requirement analysis has clearly demonstrated the projected deficiencies for the sewer utility. HDR concludes that the District's sewer rates should be adjusted to adequately meet the District's revenue requirements. Failure to adjust the rates could potentially lead to reduced O&M activities and the need to borrow additional funds from the water department.

To mitigate the funding deficiencies shown in Table 3-3, a rate transition plan was developed which proposes rate adjustments over the five year period. The proposed rates were intentionally phased in over the analysis period to reduce the impact to rate payers.

As can be seen at the bottom of Table 3-3, with these proposed adjustments, the additional revenue generated by the rate adjustment in each year balances to the deficiencies shown in that year. In that way, the rate adjustments for each year balance to revenue requirements developed for each year.

A repayment of a $700,000 loan over a 10 year period from the water utility for past deficiencies was included in the revenue requirement. The Board elected to transition the needed sewer rate adjustments over a few years to minimize the impact to customers. As a result of the phase-in the rate adjustments, there is expected to be a deficiency of approximately $329,000. To cover this shortfall the analysis has assumed a loan from the Water utility, but this shortfall may also be funded by additional expenditure reductions.

The revenue requirement analysis for the District was developed to meet the financial planning and policy objectives of the District. More specifically, the revenue requirements are designed to adequately and prudently fund the District's sewer operating and capital needs.

3.4 Summary of the Sewer Revenue Requirement Analysis

This section of the report has provided a discussion of the District's sewer revenue requirement analysis. As a part of the revenue requirement analysis, a proposed rate transition plan was developed to support the District's operating and capital needs. The proposed sewer rate adjustments are designed to be cost-based and balance the total revenues to the total revenue requirement in each year.

The next section of the report will discuss the development of the sewer cost of service analysis for District.

4. Development of the Cost of Service Analysis

4.1 Introduction

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the District's sewer system. This section of the report will provide an overview of the sewer cost of service analysis developed for the District.

The sewer cost of service analysis is concerned with the equitable allocation of the total sewer revenue requirement between the various sewer customer classes of service (e.g., residential, Non-Residential). The sewer revenue requirement developed in Section 3 was utilized in the development of the sewer cost of service analysis. For the District's study, the cost of service was performed with an assumed 4.1% rate adjustment. This means that while individual customer class rates may increase or decrease, the overall rate revenue will adjust according to the 4.1% described in the revenue requirement.

"The sewer cost of service analysis is concerned with the equitable allocation of the total sewer revenue requirement between the various potable water customer classes of service (e.g., residential, multi-residential, and commercial)."

4.2 Objectives of a Cost of Service Analysis

There are two primary objectives in conducting a sewer cost of service study:

- Allocate the District's revenue requirement among the customer classes of service
- Derive average unit costs for subsequent rate designs

The objectives of the cost of service analysis are different from determining the District's revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the fair and equitable manner to proportionately collect the revenue requirement from the District's various customer classes of service.

The second rationale for conducting a cost of service analysis is to ensure that proposed rates are designed such that it properly reflects the costs incurred by the District. For example, a sewer utility typically incurs costs related to flow (wastewater volumes), strength, and customer cost components. Each of these types of costs may be collected in a slightly different manner as to allow for the development of rates that collect costs in the same manner as they are incurred.

4.3 Determining the Customer Classes of Service

The first step in a cost of service analysis is to determine the customer classes of service. Based on the District's current rate schedules, the customer classes of service used within the District's sewer cost of service analysis were as follows:

- Residential
- Non-Residential

The District Currently has one rate but two rate classes, single family residential and all other customers or non-residential. The difference between these two classes is that the residential (single family) is charged a flat rate while the non-residential is charged that rate times their Single Family Dwelling Equivalent (SFDE).

4.4 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the District's sewer system, a cost of service analysis is conducted. A cost of service study utilizes a three-step approach to review costs. These steps take the form of functionalization, classification and allocation. Provided below is a detailed discussion of the sewer cost of service study conducted for the District, and the specific steps taken within the analysis.

4.4.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (plant) data by major operating functions (e.g., collection, pumping). Within this study, there was a limited amount of functionalization of the cost data, as the District's records functionalized a majority of the costs.

4.4.2 Classification of Costs

The second analytical task performed in a sewer cost of service study is the classification of the costs. Classification determines why the expenses were incurred or what type of need is being met. The following cost allocators were used to develop the cost of service analysis:

- **Volume-Related Costs:** Volume related costs are those costs which tend to vary with the total quantity of wastewater collected and treated.

Terminology of a Sewer Cost of Service Analysis

Functionalization – The arrangement of the cost data by functional category (e.g. collection, pumping, treatment).

Classification – The assignment of functionalized costs to cost components (e.g. volume, strength, and customer related).

Allocation – Allocating the classified costs to each class of service based upon each class's proportional contribution to that specific cost component.

Volume-Related Costs – Costs that are classified as volume related vary with the total flow of wastewater (e.g., power for pumping).

Strength-Related Costs – Costs classified as strength related refer to the wastewater treatment function. Typically, strength-related costs are further defined as biochemical oxygen demand (BOD) and suspended solids (SS). Different types of customers may have high wastewater strength characteristics and high strength wastewater costs more to treat. Treatment facilities are often designed and sized around meeting these costs.

Customer-Related Costs – Costs classified as customer related vary with the number of customers on the system, e.g., billing costs.

Direct Assignment – Costs that can be clearly identified as belonging to a specific customer group or group of customers.

- **Strength-Related Costs:** Strength related costs are those costs associated with the additional handling and treatment of high "strength" wastewater. Strength of wastewater is typically measured in biochemical oxygen demand[4] (BOD) and total suspended solids[5] (SS). Increased levels of BOD or SS generally equate to increased treatment costs.
- **Customer-Related Costs:** Customer-related costs vary with the addition or deletion of a customer or a cost which is a function of the number of customers served. Customer related costs typically include the costs of billing, collecting, and accounting.
- **Revenue-Related Costs:** Some costs associated with the utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be a utility tax which is based on gross utility revenue.

As a part of this study, the District's plant in service (assets) were functionalized and classified. Provided below in Table 4-1 is a summary of the functionalization and classification of plant in service.

Table 4 - 1
Summary of the Functionalization and Classification of the District's Sewer Plant in Service

Asset Category	Volume Related	Strength BOD Related	Strength Sus. Solids Related	Customer Related	Revenue Related
Collection	50.0%	25.0%	25.0%	0.0%	0.0%
Treatment	100.0%	0.0%	0.0%	0.0%	0.0%
Controls	100%	0.0%	0.0%	0.0%	0.0%
General Plant	88.0%	6.0%	6.0%	0.0%	0.0%
Total Net Plant In Service	**88.0%**	**6.0%**	**6.0%**	**0.0%**	**0.0%**

The classification of plant in service was based upon generally accepted cost of service principles. The details of the functionalization and classification of plant in service can be found on Exhibit 5 of the Technical Appendix.

The classification of the total revenue requirements followed a similar approach as the plant in service. As a general cost of service rule, the expense for a plant item should follow the corresponding classification of the related plant item. For example, the operation and maintenance of collection lines should be classified in the same manner as the corresponding plant in service (e.g., collection plant). This approach has been used within this cost of service

[4] BOD is the amount of dissolved oxygen that must be present in water in order for microorganisms to decompose the organic matter in the wastewater.
[5] TSS is the entire amount of organic and inorganic particles dispersed in wastewater.

analysis. Treatment plant was primarily classified as 50% volume related, 25% BOD and 25% SS related. The remainder of the plant assets were classified as 100% volume related. As a whole plant assets were classified as provided below in Table 4-2.

Table 4 – 2
Summary of the Classification of the FY 2019 Revenue Requirement ($000's)

Total	Volume (VOL)	Biochemical Oxygen Demand (BOD)	Suspended Solids (SS)	Customer Related (AC + WCA)	Revenue Related (RR)
$5,757	$5,040	$359	$359	$0	$0
100.0%	*88.0%*	*6.0%*	*6.0%*	*0.0%*	*0.0%*

The detailed exhibit of the functionalization and classification of the District's sewer revenue requirement can be found on Exhibit 11.1 of the Technical Appendix.

4.4.3 Development of the Allocation Factors

Once the classification process is complete, and the customer groups have been defined, the various classified costs were then allocated to each customer class of service. The District's classified costs were allocated to the customer classes of service using the following allocation factors.

- **Volume Allocation Factor:** Volume-related costs are generally allocated on the basis of the estimated contribution to wastewater flows. Unlike water usage, wastewater is not metered and must be estimated. The basis for estimating wastewater contributions is a customer's water consumption data.
- **Strength Allocation Factor:** Strength-related costs are classified between BOD and SS. Both of these types of costs are allocated to each of the classes of service based upon the assumed domestic strength level of 168 mg/l for BOD and 237 mg/l for SS. For the non-residential customer class, 174 mg/l for BOD and 248 mg/l SS was used. The detailed strength allocation factor developed for this cost of service can be found on Exhibit 4 of the Technical Appendix.
- **Customer Allocation Factor:** Customer costs within the cost of service analysis are allocated to the various customer classes of service based upon their respective customer counts. Two types of customer allocation factors were developed; actual and weighted. The actual customer allocation factor assumes that there is no disproportionate cost associated with serving a customer (e.g., postage for bills is the same regardless of the size or usage of the customer) and is based on the number of actual accounts. In contrast, a weighted customer allocation factor assumes that there is some disproportionality associated with serving different types of customers and attempts to estimate the level of difference in serving the customers. The development of the customer allocation factors can be found on Exhibit 7 of the Technical Appendix.

- **Revenue-Related Allocation Factor:** The revenue-related allocation factor was developed from the projected rate revenues for FY 2018-19. The revenue-related allocation factor can be found on Exhibit 4 of the Technical Appendix.
- **Direct Assignment:** Any costs that can be identified or shown to be directly related to a specific customer class are directly assigned within the cost of service study. In this particular study, there were no direct assignments.

The development of allocation factors is based on generally accepted cost of service principles as discussed in the Water Environment Federation, Manual of Practice #27.

4.5 Summary of the Sewer Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the District's plant asset records and O&M expenses. The functionalized plant and expense accounts were then classified into their various cost components. Next, the individual classification totals were then allocated to the various customer groups based on the appropriate allocation factors. For example, volume-related costs were allocated based on each customer class' share of total wastewater contributions. The total costs classified to each cost component were allocated between the customer classes using the allocation factors. Table 4 – 3 provides a summary of allocated cost components to each customer class of service.

Table 4 – 3
Summary of the Allocation of the Classified FY 2019
Revenue Requirements to the District's Customer Classes of Service ($000's)

	Total	Volume (VOL)	Bio-chemical Oxygen Demand (BOD)	Suspended Solids (SS)	Customer Related (AC + WCA)	Revenue Related (RR)
Residential	$4,960	$4,345	$308	$307	$0	$0
Non-Residential	797	695	51	51	0	0
Total	$5,757	$5,040	$359	$359	$0	$0

The distributed expenses for each customer group were then aggregated to determine each customer group's overall revenue responsibility. Provided in Table 4-4 is a summary of the District's sewer cost of service analysis.

Table 4 – 4 Summary of the Sewer Cost of Service Analysis ($000)				
Customer Class of Service	Revenues at Present Rates	Allocated Revenue Requirement	Bal. / (Def.) of Funds	Required % Change in Rates
Residential	$4,751	$4,960	($209)	4.4%
Non-Residential	779	797	(18)	2.3%
Total	$5,531	$5,757	($227)	4.1%

The above results indicate that the customer classes of service revenue collections are slightly different than what the cost of service results indicate and some minor adjustments can be made to better align costs with revenue collected. In making this statement, it is important to note that a cost of service study is an analysis of a point in time and the District's sewer costs, customer consumption patterns and total wastewater volumes will vary and change over time.

4.6 Summary of the Average Unit Costs

As noted at the start of this section of the report, there are two key pieces of information which are derived from the cost of service analysis; the equitable allocation of the total revenue requirement (i.e., total costs) and the derivation of the average unit costs. Average unit costs are essentially cost-based rates in that they are derived from the classified costs within the cost of service study. Each classified cost is divided by the appropriate billing unit (number of accounts or wastewater volumes) and per unit charge or cost is derived. Provided below in Table 4 – 5 is a summary of the average unit costs for the District's sewer cost of service analysis.

Table 4 -5 Summary of the Cost of Service Unit Costs				
	Volume Costs ($/100 CF)	Bio-Oxygen Demand Costs ($/100 CF)	Suspended Solids Costs ($/100 CF)	Total Unit Cost ($/100 CF)
Residential	$36.71	$2.60	$2.60	41.91
Non-Residential	36.71	2.69	2.69	42.08
System Average	$36.71	$2.61	$2.61	41.93

The average unit costs shown in Table 4 – 5 can be informative when considering cost causation but since the sewer utility does not bill based on volume it does not provide guidance for development of the rate.

4.7 Consultant's Cost of Service Conclusions and Recommendations

The sewer cost of service analysis conducted for the District utilized generally accepted cost of service principles and methodologies. The results indicated some cost differences between the various customer classes of service. It is recommended that the results of the cost of service be used in the development of the final proposed sewer rate designs. By using the results of the cost of service analysis the District's rates will be cost-based and reflect the requirements of Proposition 218, as it is currently understood.

4.8 Summary

This section of the report has discussed the sewer cost of service analysis developed for the District. This analysis reflects the specific and unique characteristics of the District's sewer system and was developed using generally accepted cost of service techniques and principles. The next section of the report will review the present and proposed sewer rates for the District.

5. Development of the Proposed Sewer Rate Designs

5.1 Introduction

The final step of the District's comprehensive sewer rate study is the design of proposed sewer rates to collect the desired levels of revenues, based upon the results of the revenue requirement and cost of service analyses. As previously mention, overall rate adjustments are designed to collect 4.1%, but individual customer classes are adjusting subject to the cost of service results.

5.2 Rate Design Criteria and Considerations

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the utility to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage efficient use, economic development, etc.)
- Provide revenue stability from month-to-month and year-to-year
- Promote efficient allocation of the resource
- Equitable and non-discriminatory (cost-based)
- Compliance with any State laws or requirements

When developing the proposed rate designs, all the above-listed criteria were taken into consideration. However, it should be noted that it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into consideration customers' ability to pay, and one which is cost-based. However, to meet the intent of Proposition 218, equitable and cost-based rates is the key criterion that needs to be considered when developing the District's proposed rates. However, the other goals and objectives may be taken into consideration to develop the rate structure, and proposed rates would be based on the cost of service analysis to meet the intent of Proposition 218.

5.3 Development of Cost-Based Sewer Rates

A key objective for this study is to meet the legal requirements of Proposition 218 and clearly document the steps taken to meet those requirements, which results in the development of cost-based and equitable sewer rates. Given this, the development of the District's proposed sewer rates have been closely reviewed to meet the legal requirements of California Constitution article XIII D, section 6 (Article XIII D). A key component of Article XIII D is the development of rates which reflect the cost of providing service and are proportionally allocated between the various customer classes of service. HDR would point out that there is no single methodology for

equitably assigning sewer costs to the various customer groups. The Water Environment Federation Manual of Practice No. 27 provides various and differing methodologies which may be used to establish cost-based sewer rates. Unfortunately, Article XII D is not prescriptive and does not provide a single or specific methodology for establishing legally compliant sewer rates. Given that, HDR conducted this study using generally accepted rate setting methodologies, tailored to the District's specific facilities and customers, in order meet the intent (i.e., requirements) of Article XIII D. Furthermore, the rate setting methodology used in the District's study are based on the WEF MOP #27 and are, therefore, reasonable and appropriate.

HDR is of the opinion that the proposed rates meet the legal requirements of Article XIII D. HDR reaches this conclusion based upon the following:

- **The revenue derived from sewer rates does not exceed the funds required to provide the property related service (i.e., sewer service).** The proposed rates are designed to collect the overall revenue requirement of the District's sewer system.
- **The revenues derived from sewer rates shall not be used for any purpose other than that for which the fee or charge is imposed.** The revenues derived from the District's sewer rates are used exclusively to operate and maintain the District's sewer system.
- **The amount of a fee or charge imposed upon a parcel or person as an incident of property ownership shall not exceed the proportional costs of the service attributable to the parcel.** This cost of service analysis, and this report, has focused on the issue of proportional assignment of costs to customer classes of service in accordance with generally accepted cost of service principles. The proposed rates have appropriately grouped customers into customer classes of service (e.g., residential and non-residential) that reflect the varying consumption patterns and system requirements (i.e., the benefits they receive from and burdens they place on the system) of each customer class of service. The grouping of customers and rates into these classes of service creates the equity and fairness expected under Proposition 218 by having differing rates by customer classes of service which reflect both the level of revenue to be collected by the utility, and the manner in which these costs are incurred and equitably assigned to customer classes of service based upon their proportional impacts.

5.4 Current Industry Sewer Rate Structure Approach

At the present time, there are no specific federal or state agencies or national association requirements/regulation on sewer rate structures. The vast majority of wastewater utilities follow the guiding principles of establishing cost-based rates that meet the utility's O&M and capital infrastructure requirements. The Environmental Protection Agency (EPA) provides pricing guidelines for wastewater utilities, but the focus is primarily on assuring adequate funding to maintain facilities, and not on a specific rate structure.

The California Water Efficiency Partnership (formerly the California Urban Water Conservation Council) does have Best Management Practices (BMP) encouraging the adoption of volumetric-based wastewater utilities. The Partnership and other water conservation experts believe that

having volume-based wastewater rates, where the billing is based upon water consumption, encourages water conservation. Whether the majority of consumers make the connection between the volumetric portion of their bill and their water consumption is unclear. Simply stated, most wastewater utilities do not adopt volume-based wastewater rates to encourage water conservation. Rather, most utilities view volumetric-based billing as a method that enhances customer/rate equity.

5.5 Overview of the Present Sewer Rate Structure

The District currently has two rate schedules; a residential rate schedule, and a non-residential rate schedule. Provided below is a more detailed discussion of the present rate structures by customer class of service.

Residential - The District's current residential sewer rate is a flat monthly fixed charge. This is a generally-accepted sewer rate structure and it is used by sewer utilities across California and the U.S. A fixed charge provides revenue stability for the District as well as reflects the fact that the majority of the District's costs are fixed in nature and not a function of the volume of wastewater contributed or conveyed on the system.

Non-Residential – Non-Residential customers also have a similar structure with a fixed monthly charge except in the non-residential customers case it is called a Single Family Dwelling Equivalent (SFDE) charge a multiplier is assigned to each customer that the charge is multiplied by to determine the customers total bill.

5.6 Development of the Proposed Sewer Rates

The revenue requirement analysis was used to determine the adequate and prudent level of funding needed to operate the District's sewer system. The results of the revenue requirement analysis provided the recommended rate adjustments needed to fully fund the sewer utility.

Given the development of the overall revenue needs of the utility and the cost of service analysis the next component of the study is rate design. Provided below in Table 5-1 is a summary of the present and proposed sewer rates for the District.

Table 5-1
Current and Status Proposed Rates

	Present Rates	2018-19	2019-20	2020-21	2021-22	2022-23
Service Charge (Bi-Monthly)*						
Residential	$172.32	$179.92	$187.24	$194.78	$202.58	$210.64
Non-Residential (per SFDE)	172.32	176.25	183.38	190.74	198.33	206.18

*The rates includes the R&R rate of $37.32 per 2 month billing cycle in all years.

In viewing the present and proposed rate designs it should be noted that the structure of the rates has not changed. From the customers perspective the rates have increased but what has not changed is that there are two components of the rates, operations and R&R components. The current R&R component of the rate is $37.32 per 2 month and while the overall rates might increase the R&R component remains the same at $37.32 per 2 months of usage. Shown below in Table 5 – 2 is a summary of the allocated costs and the revenue that the proposed rates are calculated to produce.

Table 5 – 2
Comparison of the FY 2019 Proposed Revenues and Allocated Costs ($000's)

	Present Revenues	Allocated Revenues	Proposed Revenues
Residential	$4,751	$4,960	$4,960
Non-Residential	779	797	797
Total	$5,531	$5,757	$5,757

5.7 Consultant's Rate Design Conclusions and Recommendations

The development of the proposed sewer rates is based on the overall level of revenues developed as part of the revenue requirement analysis and the proportional allocation of costs to the customer classes of service based on the cost of service recommendations. HDR would recommend the adoption of the proposed rates which are cost-based, equitable, proportionate to the cost of service, and reflect the specific costs of the District's sewer system.

5.8 Summary

This completes the comprehensive sewer rate study for the District. This study has provided a comprehensive review of the District's sewer rates. The study is intended to provide to the District a set of cost-based rates that will allow the District to meet their current and projected sewer system financial obligations and major capital projects for the time period reviewed, while meeting the requirements of Proposition 218.

Technical Appendix – Sewer Technical Analysis

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 1 - Escalation Factors

ESCALATION FACTORS	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	Notes
Revenues:								
Residential	0.0%	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	
Residential-Multi	Budget	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	
Commercial	Budget	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	
Other	Budget	0.5%	1.0%	1.0%	1.0%	1.0%	1.0%	
Property Tax	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Electric Revenue	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Misc. Revenue	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Expenses								
Labor	Budget	Budget	2.0%	2.0%	3.0%	3.0%	3.0%	
Benefits	Budget	Budget	4.8%	4.8%	3.0%	3.0%	3.0%	
Materials & Supplies	Budget	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Medical	Budget	Budget	4.0%	4.0%	3.0%	3.0%	3.0%	
Equipment	Budget	Budget	3.0%	3.0%	3.0%	3.0%	4.2%	
Miscellaneous	Budget	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Power/Utilities	Budget	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	
Services	Budget	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	
Cell Phone	Budget	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Permits	Budget	Budget	7.0%	7.0%	7.0%	7.0%	7.0%	
Growth	Budget	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Flat	Budget	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	
Investment Interest	0.50%	0.50%	0.50%	1.00%	1.00%	1.00%	1.00%	
Bond Interest Rate	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
Bond Terms	20	20	20	20	20	20	20	
Loan Interest Rate	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget			Projected				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Sources of Funds								
Revenues								
Residential	$4,625,519	$4,704,292	$4,751,335	$4,798,849	$4,846,837	$4,895,306	$4,944,259	As Residential
Residential-Multi	128,208	130,391	131,695	133,012	134,342	135,686	137,043	As Residential-Multi
Commercial	573,714	583,484	589,319	595,212	601,165	607,176	613,248	As Commercial
Other	56,784	57,751	58,329	58,912	59,501	60,096	60,697	As Other
Total Rate Revenues	**$5,484,679**	**$5,475,919**	**$5,530,679**	**$5,585,985**	**$5,641,845**	**$5,698,263**	**$5,755,246**	
Other Revenues								
Fees								
Account Establishment Fees	$2,850	$2,700	$3,000	$3,000	$3,000	$3,000	$3,000	As Misc. Revenue
Delinquent Account Fees	55,900	57,200	57,200	57,200	57,200	57,200	57,200	As Misc. Revenue
Repairs/Reimbursements	1,300	130	130	130	130	130	130	As Misc. Revenue
Install Water Meter	0	0	0	0	0	0	0	As Misc. Revenue
Other Installation Charges	130	0	0	0	0	0	0	As Misc. Revenue
Inspection Fees	6,440	4,250	5,100	5,100	5,100	5,100	5,100	As Misc. Revenue
Plan Check Fee	910	390	0	0	0	0	0	As Misc. Revenue
Backflow Certification	0	0	0	0	0	0	0	As Misc. Revenue
Wholesale/Irrigation/Hydrant Sales/Lancha Plana	0	0	0	0	0	0	0	As Misc. Revenue
Developer Reimbursements	8,310	6,500	6,500	6,500	6,500	6,500	6,500	As Misc. Revenue
Other	130	$130	$130	$130	$130	$130	130	As Misc. Revenue
Non-Operating Revenue								
Stand-by Fees	$34,450	$34,450	$34,450	$34,450	$34,450	$34,450	34,450	As Misc. Revenue
Restricted Property Taxes (net of transfer to reserves)	$339,823	$351,812	$358,846	$366,024	$373,345	$380,812	388,428	As Property Tax
Unrestricted Property Taxes (net of transfer to reserve	$248,081	$252,403	$257,450	$262,599	$267,851	$273,208	278,672	As Property Tax
Investment Income (allocated to operating)	0	0	0	0	0	0	0	As Misc. Revenue
Other:								
Power Sales, North Fork	$136,916	$140,400	$143,208	$146,072	$148,786	$151,973	$153,493	As Other
Power Sales, New Hogan	39,000	59,020	45,500	45,500	45,500	45,500	45,955	As Other
Grants/OES Reimbursements	0	0	0	0	0	0	0	As Other
Sale of Surplus Equipment	0	0	0	0	0	0	0	As Other
Copies	26	0	0	0	0	0	0	As Other
Misc. Operating Revenue	6,760	3,900	3,900	3,900	3,900	3,900	3,939	As Other
Other District Reimbursements	3,900	2,600	2,600	2,600	2,600	2,600	2,626	As Other
Rental Income per schedule	7,560	15,775	15,808	16,016	16,432	16,432	16,596	As Other
Total Other Revenues	$892,486	$931,659	$933,822	$949,221	$964,924	$980,935	$996,219	
Total Sources of Funds	**$6,377,165**	**$6,407,578**	**$6,464,501**	**$6,535,206**	**$6,606,769**	**$6,679,199**	**$6,751,465**	

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget			Projected				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Applications of Funds								
Administration - General								
Salaries/Wages	$2,040,386	$1,877,549	$1,935,140	$1,984,970	$2,044,519	$2,105,855	$2,169,031	As Labor
Overtime	56,825	70,292	82,366	84,560	87,096	89,709	92,401	As Benefits
Benefits	1,266,255	1,259,020	1,324,228	1,366,709	1,407,710	1,449,941	1,493,440	As Benefits
Medical/Dental Reimbursement	14,510	9,216	9,216	9,216	9,492	9,777	10,071	As Medical
Total Administrative - General	$3,377,976	$3,216,077	$3,350,950	$3,445,455	$3,548,818	$3,655,283	$3,764,941	
Maintenance Expense								
Utilities	$499,978	$429,487	$435,370	$442,418	$460,115	$478,520	$497,660	As Power/Utilities
Materials & Supplies	411,336	413,538	383,285	389,000	400,670	412,690	425,071	As Materials & Supplies
Safety Materials & Supplies	9,000	13,535	13,755	13,978	14,398	14,830	15,275	As Materials & Supplies
Administrative Technology	8,840	9,180	9,329	9,481	9,718	9,961	10,210	As Services
Chemicals	176,400	171,400	174,185	177,015	182,326	187,795	193,429	As Materials & Supplies
Outside Services/Repairs	67,381	58,496	59,446	60,412	61,923	63,471	65,057	As Services
Service Maintenance Contracts	117,032	114,466	116,002	117,884	120,831	123,852	126,948	As Services
Drug & Alcohol Testing	390	405	209	211	216	221	227	As Services
Building Repairs	780	1,350	1,372	1,394	1,436	1,479	1,524	As Labor
Recruiting	2,600	1,350	1,372	1,394	1,436	1,479	1,524	As Labor
Claims/Damages	1,300	1,350	1,372	1,394	1,429	1,465	1,501	As Miscellaneous
Computer Licenses and Maint Agreements	4,872	5,697	5,790	5,884	6,031	6,181	6,336	As Services
Janitorial Services	6,058	6,291	6,393	6,497	6,660	6,826	6,997	As Services
Laboratory Services	88,000	98,000	99,592	101,211	103,741	106,334	108,993	As Services
Outside Legal Fees	83,200	67,230	62,922	63,897	65,495	67,132	68,811	As Services
Accounting/Auditing	8,242	9,072	9,219	9,369	9,603	9,844	10,090	As Services
Advertising/Publicity	390	540	549	558	572	586	601	As Services
Elections	1,820	0	2,970	0	0	0	0	As Materials & Supplies
Professional Services	126,229	127,029	74,971	75,716	77,609	79,549	81,538	As Services
Vehicle Expense	158,750	131,250	133,383	135,550	139,616	143,805	149,898	As Equipment
Rental Exp/Vehicle and Equip.	4,900	9,900	10,061	10,224	10,531	10,847	11,307	As Equipment
Forms and Supplies	559	608	617	627	646	666	686	As Materials & Supplies
Permits & Licenses	8,400	4,000	4,065	4,131	4,234	4,340	4,449	As Miscellaneous

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Postage	3,900	5,562	5,652	5,744	5,917	6,094	6,277	As Materials & Supplies
Publications and Subscriptions	1,395	703	579	587	602	617	632	As Miscellaneous
Dues and Memberships	32,034	30,253	30,661	31,158	31,937	32,735	33,554	As Miscellaneous
Recording Title Reports	0	0	0	0	0	0	0	As Services
Printing	260	68	1	0	0	0	0	As Equipment
Training, Conferences and Travel	27,224	31,582	22,130	22,463	23,024	23,600	24,190	As Services
Other Travel Costs	8,801	2,430	9,198	9,215	9,446	9,682	9,924	As Miscellaneous
Director Conf & Committee Expense	0	0	0	0	0	0	0	As Miscellaneous
Hogan Payment-Purchased Power	76,248	79,181	80,467	81,775	85,046	88,448	91,985	As Power/Utilities
Purchased Water	0	0	0	0	0	0	0	As Power/Utilities
Retired Employee Costs	306,566	153,360	155,852	158,384	163,136	168,030	173,071	As Labor
Bad Debt Expense	14,300	12,960	13,171	13,385	13,719	14,062	14,414	As Miscellaneous
Unemployment Claims	520	540	549	558	574	592	609	As Labor
Insurance	58,500	54,000	54,877	55,769	57,163	58,592	60,057	As Services
Fed, State & County Wtr/Swr Fees	185,000	175,000	177,843	180,733	185,251	189,883	194,630	As Miscellaneous
Federal Dam & Admin Fees	520	540	549	558	572	586	601	As Miscellaneous
State Water Right Fees	8,580	8,100	8,232	8,365	8,574	8,789	9,009	As Miscellaneous
Mandated Plans	0	9,450	154	73	75	77	79	As Miscellaneous
Strategic Plans/Updates.	26,000	18,509	301	144	147	151	155	As Services
Water Conservation	6,500	4,050	4,116	4,183	4,287	4,394	4,504	As Miscellaneous
Merchant Credit Card Discount	14,560	16,200	16,463	16,731	16,898	17,067	17,238	As Growth
Misc. Operating/Maint. Exp.	0	0	0	0	0	0	0	As Miscellaneous
Equipment Purchased	0	0	0	0	0	0	0	As Equipment
Agent Fees	520	540	549	558	572	586	601	As Miscellaneous
Calaveras County Fees	0	0	0	0	0	0	0	As Miscellaneous
Misc. Non-Operating Costs	2,283	2,236	(0)	0	0	0	0	As Miscellaneous
Total Maintenance Expense	**$2,560,169**	**$2,279,435**	**$2,187,573**	**$2,218,629**	**$2,286,176**	**$2,355,857**	**$2,429,657**	
Capital Outlays								
Vehicles / Equipment	$137,142	$296,420	$145,400	$152,400	$159,400	$166,400	$173,451	As Equipment
Projects	34,100	80,000	40,000	42,000	44,000	46,000	47,949	As Equipment
Total Capital Outlays	**$171,242**	**$376,420**	**$185,400**	**$194,400**	**$203,400**	**$212,400**	**$221,400**	
Total Oper. & Maint. Expense	**$6,109,387**	**$5,871,932**	**$5,723,923**	**$5,858,483**	**$6,038,394**	**$6,223,540**	**$6,415,999**	
Capital Expenditures Funding	$1,166,082	$1,175,919	$1,187,679	$1,199,555	$1,211,551	$1,223,666	$1,235,903	

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget			Projected				
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Debt Service								
PERS Side Fund - Principal	$0	$81,065	$69,395	$0	$0	$0	$0	Debt Schedule
PERS Side Fund - Interest	0	3,339	941	0	0	0	0	
BBVA Compass Bond Refinance - Principal	74,398	19,120	0	0	0	0	0	20 yrs @ 0.5%
BBVA Compass Bond Refinance - Interest	860	122	0	0	0	0	0	
Umpqua Capital R&R Loan - Principal	284,936	347,418	374,311	382,377	390,686	0	0	Debt Schedule
Umpqua Capital R&R Loan - Interest	36,754	30,321	22,699	14,634	6,324	0	0	
Vac-Con Loan - Principal	17,546	18,618	0	0	0	0	0	
Vac-Con Loan - Interest	788	319	0	0	0	0	0	
Wallace Loan Payoff - Principal	24,612	0	0	0	0	0	0	
Wallace Loan Payoff - Interest	1,795	0	0	0	0	0	0	
New Hogan (US Bureau of Reclaimation Note 1970) - Pri	14,217	14,919	14,981	15,834	16,547	17,292	18,069	
New Hogan (US Bureau of Reclaimation Note 1970) - Int	4,016	5,965	4,925	4,311	3,670	2,999	2,298	
Admin Building - Principal	0	0	154,100	157,952	161,901	165,949	170,097	Defer Principal until 2018-19
Admin Building - Interest	19,500	20,250	20,250	16,397	12,449	8,398	4,253	
New Vac Con -Principal	0	0	16,770	23,126	24,032	24,974	25,952	
New Vac Con -Interest	0	0	3,294	3,627	2,721	1,779	800	
USDA Reach 3a Bond - Principal	0	0	0	0	0	0	0	
USDA Reach 3a Bond - Interest	0	0	0	0	0	0	0	
New Revenue Bond - Principal	0	0	0	0	0	0	0	20 yrs @ 5.0%
New Revenue Bond - Interest			0	0	0	0	0	
Net Debt Service	**$479,422**	**$541,456**	**$681,667**	**$618,259**	**$618,330**	**$221,390**	**$221,469**	
Change in Working Capital (+ = To Reserves / - = From Reserves)								
Operating Fund	($734,477)	($340,855)	($328,511)	($285,110)	($152,440)	($8,902)	$143,210	
Repayment from Water Fund - Interest				34,770	31,594	28,355	25,052	10 years, @ 2%
Repayment from Water Fund - Principal				158,770	161,945	165,184	168,488	
BBVA Debt Service - Expansion Funds	(50,443)	(12,912)	0	0	0	0	0	
Capital R&R Debt Service - R&R Funds	(321,690)	(377,739)	(397,010)	(397,011)	(397,010)	0	0	
OP HQ Interest Payment - Fund 108	(19,500)	(20,250)	(20,250)	(16,397)	(12,449)	(8,398)	(4,253)	
operating funding gap	0	(106,626)	0	0	0	0	0	
Wallace Loan Payoff - Fund 108	(21,168)	0	0	0	0	0	0	
New Hogan O&M Costs	(27,300)	0	0	0	0	0	0	
Capital Equipment/Projects - Fund 108	(123,476)	(158,000)	0	0	0	0	0	
Capital R&R Projects - R&R Funds	(52,834)	(138,138)	(128,757)	(140,915)	(142,324)	(143,747)	(145,184)	
CIP Projects	(26,838)	(27,210)	(27,482)	(27,757)	(28,034)	(28,315)	(28,598)	
Total change in Working Capital	**($1,377,727)**	**($1,181,729)**	**($902,011)**	**($673,651)**	**($538,718)**	**$4,177**	**$158,714**	

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 2 - Sources & Application of Funds

	Budget		Projected					
	2016-17	**2017-18**	**2018-19**	**2019-20**	**2020-21**	**2021-22**	**2022-23**	Notes
Total Revenue Requirements	**$6,377,165**	**$6,407,578**	**$6,691,258**	**$7,002,647**	**$7,329,557**	**$7,672,774**	**$8,032,085**	
Balance/(Deficiency) of Funds	$0	$0	($226,758)	($467,441)	($722,788)	($993,575)	($1,280,620)	
Rate Adjust. as a % of Rate Rev	**0.0%**	**0.0%**	**4.1%**	**8.4%**	**12.8%**	**17.4%**	**22.3%**	
Proposed Rate Adjustment	0.0%	0.0%	4.1%	4.1%	4.1%	4.1%	4.1%	
Addt'l Rev from Proposed Adjustments	$0	$0	$226,758	$467,441	$722,788	$993,575	$1,280,620	
Net Bal/(Def) of Funds After Rate Adj.	0	0	0	(0)	0	0	0	
Additional Rate Increase Needed	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Debt Service Coverage Ratio								
Before Rate Adjustment	2.99	3.16	2.83	3.03	2.88	7.59	7.10	
After Rate Adjustment	2.99	3.16	3.16	3.79	4.05	12.07	12.88	
Average Residential (Bi-Monthly)	$172.32	$172.32	$179.39	$186.74	$194.40	$202.37	$210.66	
$ Change Per Month			7.07	7.35	7.66	7.97	8.30	
Cumulative $ Change per Month			7.07	14.42	22.08	30.05	38.34	
Operating Fund								
Beginning Working Capital Balance [2]	$0	($734,477)	($1,075,332)	($381,361)	($666,471)	($818,910)	($827,813)	
Plus: Change in Working Capital General	0	0	1,738,483	0	0	0	143,210	
Less: Uses of Funds	734,477	340,855	1,044,511	285,110	152,440	8,902	0	
Ending Balance	($734,477)	($1,075,332)	($381,361)	($666,471)	($818,910)	($827,813)	($684,603)	
Operating Fund Target Balance (90 Days O&M)		$1,447,874	$1,411,378	$1,444,558	$1,488,919	$1,534,572	$1,582,027	

[1] minimum balance = 90 days O&M plus taxes
[2] Beginning balances from Statement of Accounts

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 3 - Capital Funding

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	
R&R Rate Revenue								
Residential	$1,001,766	$1,010,217	$1,020,319	$1,030,523	$1,040,828	$1,051,236	$1,061,749	As Residential
Residential-Multi	27,766	$28,001	28,281	28,564	28,849	29,138	29,429	As Residential-Multi
Commercial	124,251	$125,300	126,553	127,818	129,096	130,387	131,691	As Commercial
Other	12,298	$12,402	12,526	12,651	12,777	12,905	13,034	As Other
Total R&R Rate Revenue	$1,166,082	$1,175,919	$1,187,679	$1,199,555	$1,211,551	$1,223,666	$1,235,903	
Transfer to:								
R&R Funds for Operations								
Transfer to Ops for Capital R&R Debt Service - R&R Funds	$321,690	$377,739	$397,010	$397,011	$397,010	$0	$0	
Capital R&R Projects - R&R Funds	52,834	138,138	128,757	140,915	142,324	143,747	145,184	
Transfer to Ops for CIP Sal/ben	26,838	27,210	27,482	27,757	28,034	28,315	28,598	
Expansion Funds for Operations	50,443	12,912	0	0	0	0	0	

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 3 - Capital Funding

		2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Capital Outlays								
La Contenta	Master Plan	$0	$30,000	$0	$0	$0	$0	$0
Copper Cove	Master Plan	0	55,000	0	0	0	0	0
Copper Cove	Report Waste Discharge/Permit	182,033	75,000	0	0	0	0	0
Wallace	Report Waste Discharge/Permit	0	25,000	0	0	0	0	0
Wallace	Plant Renovations/SCADA/Electrical	0	50,000	200,000	0	0	0	0
Vallecito	Title 22 / TSTAN Project	0	140,000	140,000	0	0	0	0
Vallecito	I&I Equalization Improvements	0	200,000	200,000	0	0	0	0
Copper Cove	Pond 6 Enlargement/Expansion	0	300,000	1,000,000	4,200,000	0	0	0
West Point	Wilseyville Consolidation Grant	0	250,000	2,500,000	2,000,000	0	0	0
Poker Flat	Lift Station 8, 12 & 13 Bypass	0	300,000	1,000,000	200,000	0	0	0
Lake Tulloch	Lift Station 15 & 18 Renovations	0	300,000	500,000	200,000	0	0	0
Forest Meadows	UV System Replacement	0	0	0	0	0	0	0
La Contenta	Secondary Clarifier	0	0	0	0	0	0	0
Arnold	Secondary Clarifier	0	0	0	0	0	0	0
Various	Arc Flash Assessments	0	0	0	0	0	0	0
Various	Lift Stations (LS2,WP,etc)	0	0	0	0	0	0	0
Various	Pipeline/Forcemain Replacement	0	0	75,000	75,000	0	0	0
Various	Road Repairs	0	0	0	0	0	0	0
Various	Biosolids/Sludge Handling/Disposal	0	0	0	0	0	0	0
Total Planned Capital Improvements		$182,033	$1,725,000	$5,615,000	$6,675,000	$0	$0	$0
Unplanned Capital		0	0	0	0	0	0	0
Total Capital Outlays		**$182,033**	**$1,725,000**	**$5,615,000**	**$6,675,000**	**$0**	**$0**	**$0**

Calaveras County Water District
Sewer Utility - 500
Revenue Requirement
Exhibit 3 - Capital Funding

	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23
Use of R&R Funds	$182,033	$760,000	$1,448,333	$2,341,667	$0	$0	$0
Use of Expansion Funds	0	585,000	1,416,667	2,333,333	0	0	0
Use of Grant Funds	0	340,000	2,590,000	2,000,000	0	0	0
Other Funding	0	40,000	160,000	0	0	0	0
Transfers from Operating	0	0	0	0	0	0	0
Revenue Bonds	0	0	0	0	0	0	0
	$182,033	$1,725,000	$5,615,000	$6,675,000	$0	$0	$0
R&R Funds							
Beginning Fund Balance	$2,259,150	$2,856,046	$2,742,523	$1,938,262	$232,772	$885,725	$1,956,703
Plus:							
R&R Rate Revenue	$1,166,082	$1,175,919	$1,187,679	$1,199,555	$1,211,551	$1,223,666	$1,235,903
Transfer from Operations	0	0	0	0	0	0	0
Interest Earnings	14,209	13,644	9,643	2,305	8,770	19,373	30,188
Less:							
Transfer to Operations	$401,362	$543,087	$553,249	$565,682	$567,368	$172,062	$173,782
R&R Capital Projects	$182,033	$760,000	$1,448,333	$2,341,667	$0	$0	$0
Ending Fund Balance	$2,856,046	$2,742,523	$1,938,262	$232,772	$885,725	$1,956,703	$3,049,011
Expansion Funds:							
Beginning Fund Balance	$2,312,713	2,312,713	1,727,713	311,046	(2,022,287)	(2,022,287)	(2,022,287)
Plus:							
Addition to Fund	0	0	0	0	0	0	0
Less:							
Expansion Capital Projects	0	585,000	1,416,667	2,333,333	0	0	0
Transfer to Operations							
Ending Fund Balance	$2,312,713	$1,727,713	$311,046	($2,022,287)	($2,022,287)	($2,022,287)	($2,022,287)

Calaveras County Water District
Sewer Utility - 500
Development of Allocation Factors
Exhibit 4 - Volume

	Volume			
	Usage (100 CF) [1]	I&I [2] 35%	Wastewater Flow (MGD)	% of Total
Residential	118,376	159,807	0.59	86.2%
Residential-Multi	3,562	4,809	0.02	2.6%
Commercial	13,983	18,877	0.07	10.2%
Other	1,384	1,868	0.01	1.0%
Total Actual Flow	**137,306**	**185,362**	**0.68**	**100.0%**

Allocation Factor **(VOL)**

[1] 2016/17 Production Reports 0.67 MGD
[2] 2016/17 Production Report Inflow and Infiltration = % Change Avg Dry weather and Wet weather

Exhibit 4 - Wastewater Strength

		Bio-Chemical Oxygen Demand			Total Suspended Solids		
	Annual Flow (100 CF)	Avg Factor (mg/l)	Calculated lbs	% of Total	Avg Factor (mg/l)	Calculated lbs	% of Total
Residential	118,376	168	124,152	86%	237	175,142	86%
Residential-Multi	3,562	168	3,736	3%	237	5,271	3%
Commercial	13,983	175	15,277	11%	250	21,824	11%
Other	1,384	175	1,512	1%	250	2,160	1%
Total	**137,306**		**144,676**	**100%**		**204,397**	**100%**
	18,930			**(BOD)**			**(TSS)**

Calaveras County Water District
Sewer Utility - 500
Development of Allocation Factors
Exhibit 4 - Customer

	Actual Customer		Customer Service & Accounting		
	Number of Billing Units	% of Total	Weighting Factor	Weighted Customer	% of Total
Residential	4,474	85.9%	1.00	4,474	85.9%
Residential-Multi	124	2.4%	1.00	124	2.4%
Commercial	555	10.7%	1.00	555	10.7%
Other	55	1.1%	1.00	55	1.1%
Total	**5,208**	**100.0%**		**5,208**	**100.0%**
Allocation Factor		**(AC)**			**(WCA)**

Exhibit 4 - Fire Protection & Revenue Related

	Revenue Related 2018-19 Present Rates	% of Total
Residential	$4,751,335	85.91%
Residential-Multi	131,695	2.38%
Commercial	589,319	10.66%
Other	58,329	1.05%
Total	$5,530,679	**100.00%**
Allocation Factor		**(RR)**

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of Plant in Service
Exhibit 5 - Plant Allocation

Account Title	Total Plant 2006	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related: Actual Customer (AC)	Customer Related: Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Treatement Plant									
Aerator	$79,974	$39,987	$19,994	$19,994	$0	$0	$0	$0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Belt Press	250,427	125,213	62,607	62,607	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Lagoons	10,174	5,087	2,544	2,544	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Clarifier	17,299	8,650	4,325	4,325	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Lab Equipment	23,982	11,991	5,996	5,996	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Mixer	11,853	5,927	2,963	2,963	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Polymer Blend Unit	23,040	11,520	5,760	5,760	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Sludge Feed Pump	20,146	10,073	5,037	5,037	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Treatment Plant	11,627,614	5,813,807	2,906,904	2,906,904	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
UV System	26,064	13,032	6,516	6,516	0	0	0	0	50% (VOL)/ 25% (BOD)/ 25% (TSS)
Overflow Tank	9,099	9,099	0	0	0	0	0	0	100% (VOL)
Total Source of Supply	$12,099,673	$6,054,386	$3,022,644	$3,022,644	$0	$0	$0	$0	
Collection									
Collection	$4,351,028	$4,351,028	$0	$0	$0	$0	$0	$0	100% (VOL)
Lift Station	5,047,264	5,047,264	0	0	0	0	0	0	100% (VOL)
Pumps	490,393	490,393	0	0	0	0	0	0	100% (VOL)
Flowmeter	4,348	4,348	0	0	0	0	0	0	100% (VOL)
Total Pumping Plant	$9,893,032	$9,893,032	$0	$0	$0	$0	$0	$0	

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of Plant in Service
Exhibit 5 - Plant Allocation

Account Title	Total Plant 2006	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related Weighted for: Actual Customer (AC)	Customer Related Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Control Systems									
Controls	$29,116	$29,116	$0	$0	$0	$0	$0	$0	100% (VOL)
SCADA	205,939	205,939	0	0	0	0	0	0	100% (VOL)
Software	5,305	5,305	0	0	0	0	0	0	100% (VOL)
Total Controls	$240,360	$240,360	$0	$0	$0	$0	$0	$0	
Unidentified Improvements	$29,528,315	$29,528,315	$0	$0	$0	$0	$0	$0	100% (VOL)
Plant Before General Plant	$51,761,380	$45,716,093	$3,022,644	$3,022,644	$0	$0	$0	$0	
General Plant									
Building & Lot	$219,014	$193,435	$12,789	$12,789	$0	$0	$0	$0	as Plant Before General
Office Equipment	187,568	165,662	10,953	10,953	0	0	0	0	as Plant Before General
Office Computer/Software	245,875	217,159	14,358	14,358	0	0	0	0	as Plant Before General
Vehicles	482,106	425,800	28,153	28,153	0	0	0	0	as Plant Before General
Shop & Garage Equip	172,231	152,116	10,058	10,058	0	0	0	0	as Plant Before General
Power Equipment	119,682	105,704	6,989	6,989	0	0	0	0	as Plant Before General
Communications Equip.	36,017	31,811	2,103	2,103	0	0	0	0	as Plant Before General
Total General Plant	$1,462,493	$1,291,686	$85,403	$85,403	$0	$0	$0	$0	
TOTAL PLANT IN SERVICE	**$53,223,873**	**$47,007,779**	**$3,108,047**	**$3,108,047**	**$0**	**$0**	**$0**	**$0**	
Less: Accumulated Depreciation	$5,582,124	$4,930,180	$325,972	$325,972	$0	$0	$0	$0	as Total Plant in Service
Total Accumulated Depreciation	$5,582,124	$4,930,180	$325,972	$325,972	$0	$0	$0	$0	
TOTAL NET PLANT IN SERVICE	**$47,641,749**	**$42,077,600**	**$2,782,075**	**$2,782,075**	**$0**	**$0**	**$0**	**$0**	

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related: Actual Customer (AC)	Customer Related: Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Applications of Funds									
Administration - General									
Salaries/Wages	$1,935,140	$1,709,132	$113,004	$113,004	$0	$0	$0	$0	as Plant Before General
Overtime	82,366	72,747	4,810	4,810	0	0	0	0	as Plant Before General
Benefits	1,324,228	1,169,569	77,329	77,329	0	0	0	0	as Plant Before General
Medical/Dental Reimbursement	9,216	8,140	538	538	0	0	0	0	as Plant Before General
Total Administrative - General	$3,350,950	$2,959,588	$195,681	$195,681	$0	$0	$0	$0	
Maintenance Expense									
Utilities	$435,370	$384,523	$25,424	$25,424	$0	$0	$0	$0	as Plant Before General
Materials & Supplies	383,285	338,520	22,382	22,382	0	0	0	0	as Plant Before General
Safety Materials & Supplies	13,755	12,148	803	803	0	0	0	0	as Plant Before General
Administrative Technology	9,329	8,240	545	545	0	0	0	0	as Plant Before General
Chemicals	174,185	153,842	10,172	10,172	0	0	0	0	as Plant Before General
Outside Services/Repairs	59,446	52,504	3,471	3,471	0	0	0	0	as Plant Before General
Service Maintenance Contracts	116,002	102,454	6,774	6,774	0	0	0	0	as Plant Before General
Drug & Alcohol Testing	209	185	12	12	0	0	0	0	as Plant Before General
Building Repairs	1,372	1,212	80	80	0	0	0	0	as Plant Before General
Recruiting	1,372	1,212	80	80	0	0	0	0	as Plant Before General
Claims/Damages	1,372	1,212	80	80	0	0	0	0	as Plant Before General
Computer Licenses and Maint Agreements	5,790	5,113	338	338	0	0	0	0	as Plant Before General
Janitorial Services	6,393	5,647	373	373	0	0	0	0	as Plant Before General
Laboratory Services	99,592	87,961	5,816	5,816	0	0	0	0	as Plant Before General
Outside Legal Fees	62,922	55,574	3,674	3,674	0	0	0	0	as Plant Before General
Accounting/Auditing	9,219	8,143	538	538	0	0	0	0	as Plant Before General
Advertising/Publicity	549	485	32	32	0	0	0	0	as Plant Before General
Elections	2,970	2,623	173	173	0	0	0	0	as Plant Before General
Professional Services	74,971	66,215	4,378	4,378	0	0	0	0	as Plant Before General
Vehicle Expense	133,383	117,805	7,789	7,789	0	0	0	0	as Plant Before General
Rental Exp/Vehicle and Equip.	10,061	8,886	588	588	0	0	0	0	as Plant Before General
Forms and Supplies	617	545	36	36	0	0	0	0	as Plant Before General
Permits & Licenses	4,065	3,590	237	237	0	0	0	0	as Plant Before General
Postage	5,652	4,992	330	330	0	0	0	0	as Plant Before General

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related Weighted for: Actual Customer (AC)	Customer Related Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Publications and Subscriptions	579	511	34	34	0	0	0	0	as Plant Before General
Dues and Memberships	30,661	27,080	1,790	1,790	0	0	0	0	as Plant Before General
Recording Title Reports	0	0	0	0	0	0	0	0	as Plant Before General
Printing	1	1	0	0	0	0	0	0	as Plant Before General
Training, Conferences and Travel	22,130	19,546	1,292	1,292	0	0	0	0	as Plant Before General
Other Travel Costs	9,198	8,123	537	537	0	0	0	0	as Plant Before General
Director Conf & Committee Expense	0	0	0	0	0	0	0	0	as Plant Before General
Hogan Payment-Purchased Power	80,467	80,467	0	0	0	0	0	0	as Collection
Purchased Water	0	0	0	0	0	0	0	0	100% (VOL)
Retired Employee Costs	155,852	137,650	9,101	9,101	0	0	0	0	as Plant Before General
Bad Debt Expense	13,171	11,632	769	769	0	0	0	0	as Plant Before General
Unemployment Claims	549	485	32	32	0	0	0	0	as Plant Before General
Insurance	54,877	48,468	3,205	3,205	0	0	0	0	as Plant Before General
Fed, State & County Wtr/Swr Fees	177,843	157,073	10,385	10,385	0	0	0	0	as Plant Before General
Federal Dam & Admin Fees	549	485	32	32	0	0	0	0	as Plant Before General
State Water Right Fees	8,232	7,270	481	481	0	0	0	0	as Plant Before General
Mandated Plans	154	136	9	9	0	0	0	0	as Plant Before General
Strategic Plans/Updates.	301	266	18	18	0	0	0	0	as Plant Before General
Water Conservation	4,116	3,635	240	240	0	0	0	0	as Plant Before General
Merchant Credit Card Discount	16,463	14,540	961	961	0	0	0	0	as Plant Before General
Misc. Operating/Maint. Exp.	0	0	0	0	0	0	0	0	as Plant Before General
Equipment Purchased	0	0	0	0	0	0	0	0	as Plant Before General
Agent Fees	549	485	32	32	0	0	0	0	as Plant Before General
Calaveras County Fees	0	0	0	0	0	0	0	0	as Plant Before General
Misc. Non-Operating Costs	(0)	(0)	(0)	(0)	0	0	0	0	as Plant Before General
Total Maintenance Expense	**$2,187,573**	**$1,941,481**	**$123,046**	**$123,046**	**$0**	**$0**	**$0**	**$0**	
Capital Outlays									
Vehicles / Equipment	$145,400	$145,400	$0	$0	$0	$0	$0	$0	100% (VOL)
Projects	40,000	40,000	0	0	0	0	0	0	100% (VOL)
Total Capital Outlays	**$185,400**	**$185,400**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Oper. & Maint. Expense	**$5,723,923**	**$5,086,469**	**$318,727**	**$318,727**	**$0**	**$0**	**$0**	**$0**	

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of
Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related Actual Customer (AC)	Customer Related Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Debt Service									
PERS Side Fund - Principal	$69,395	$61,291	$4,052	$4,052	$0	$0	$0	$0	as Plant Before General
PERS Side Fund - Interest	941	831	55	55	0	0	0	0	as Plant Before General
BBVA Compass Bond Refinance - Principal	0	0	0	0	0	0	0	0	as Plant Before General
BBVA Compass Bond Refinance - Interest	0	0	0	0	0	0	0	0	as Plant Before General
Umpqua Capital R&R Loan - Principal	374,311	330,595	21,858	21,858	0	0	0	0	as Plant Before General
Umpqua Capital R&R Loan - Interest	22,699	20,048	1,326	1,326	0	0	0	0	as Plant Before General
Vac-Con Loan - Principal	0	0	0	0	0	0	0	0	as Plant Before General
Vac-Con Loan - Interest	0	0	0	0	0	0	0	0	as Plant Before General
Wallace Loan Payoff - Principal	0	0	0	0	0	0	0	0	as Plant Before General
Wallace Loan Payoff - Interest	0	0	0	0	0	0	0	0	as Plant Before General
New Hogan (US Bureau of Reclaimation Note 1970) - Principal	14,981	13,231	875	875	0	0	0	0	as Plant Before General
New Hogan (US Bureau of Reclaimation Note 1970) - Interest	4,925	4,350	288	288	0	0	0	0	as Plant Before General
Admin Building - Principal	154,100	136,102	8,999	8,999	0	0	0	0	as Plant Before General
Admin Building - Interest	20,250	17,885	1,183	1,183	0	0	0	0	as Plant Before General
New Vac Con -Principal	16,770	14,812	979	979	0	0	0	0	as Plant Before General
New Vac Con -Interest	3,294	2,910	192	192	0	0	0	0	as Plant Before General
USDA Reach 3a Bond - Principal	0	0	0	0	0	0	0	0	as Plant Before General
USDA Reach 3a Bond - Interest	0	0	0	0	0	0	0	0	as Plant Before General
New Revenue Bond - Principal	0	0	0	0	0	0	0	0	as Plant Before General
New Revenue Bond - Interest	0	0	0	0	0	0	0	0	as Plant Before General
Net Debt Service	**$681,667**	**$602,054**	**$39,806**	**$39,806**	**$0**	**$0**	**$0**	**$0**	
Total CIP From Rates	**$1,187,679**	**1,187,679**	**0**	**0**	**0**	**0**	**0**	**0**	100% (VOL)
Change in Working Capital (+ = To Reserves / - = From Reserves)									
Operating Fund	($328,511)	($328,511)	$0	$0	$0	$0	$0	$0	100% (VOL)
BBVA Debt Service - Expansion Funds	0	0	0	0	0	0	0	0	100% (VOL)
Capital R&R Debt Service - R&R Funds	(397,010)	(397,010)	0	0	0	0	0	0	100% (VOL)
OP HQ Interest Payment - Fund 108	(20,250)	(20,250)	0	0	0	0	0	0	100% (VOL)
operating funding gap	0	0	0	0	0	0	0	0	100% (VOL)
Wallace Loan Payoff - Fund 108	0	0	0	0	0	0	0	0	100% (VOL)
New Hogan O&M Costs	0	0	0	0	0	0	0	0	100% (VOL)
Capital Equipment/Projects - Fund 108	0	0	0	0	0	0	0	0	100% (VOL)
Capital R&R Projects - R&R Funds	(128,757)	(128,757)	0	0	0	0	0	0	100% (VOL)
CIP Projects	(27,482)	(27,482)	0	0	0	0	0	0	100% (VOL)
Total Change in Working Capital	**($902,011)**	**($902,011)**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	

Calaveras County Water District
Sewer Utility - 500
Functionalization & Classification of Revenue Requirements
Exhibit 6 - Allocation of Expenses

	Total Expenses 2018-19	Volume (VOL)	Bio-oxygen Demand (BOD)	Suspended Solids (TSS)	Customer Related: Actual Customer (AC)	Customer Related: Weighted for: Customer Acct/Svcs (WCA)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Total Revenue Requirements	**$6,691,258**	**$5,974,191**	**$358,534**	**$358,534**	**$0**	**$0**	**$0**	**$0**	
Less: Other Income									
Fees	$0	$0	$0	$0	$0	$0	$0	$0	100% (VOL)
Account Establishment Fees	3,000	3,000	0	0	0	0	0	0	100% (VOL)
Delinquent Account Fees	57,200	57,200	0	0	0	0	0	0	100% (VOL)
Repairs/Reimbursements	130	130	0	0	0	0	0	0	100% (VOL)
Install Water Meter	0	0	0	0	0	0	0	0	100% (VOL)
Other Installation Charges	0	0	0	0	0	0	0	0	100% (VOL)
Inspection Fees	5,100	5,100	0	0	0	0	0	0	100% (VOL)
Plan Check Fee	0	0	0	0	0	0	0	0	100% (VOL)
Backflow Certification	0	0	0	0	0	0	0	0	100% (VOL)
Wholesale/Irrigation/Hydrant Sales/Lancha Plana	0	0	0	0	0	0	0	0	100% (VOL)
Developer Reimbursements	6,500	6,500	0	0	0	0	0	0	100% (VOL)
Other	130	130	0	0	0	0	0	0	100% (VOL)
Non-Operating Revenue	0	0	0	0	0	0	0	0	100% (VOL)
Stand-by Fees	34,450	34,450	0	0	0	0	0	0	100% (VOL)
Restricted Property Taxes (net of transfer to reserves)	358,846	358,846	0	0	0	0	0	0	100% (VOL)
Unrestricted Property Taxes (net of transfer to reserves)	257,450	257,450	0	0	0	0	0	0	100% (VOL)
Investment Income (allocated to operating)	0	0	0	0	0	0	0	0	100% (VOL)
Other:	0	0	0	0	0	0	0	0	100% (VOL)
Power Sales, North Fork	143,208	143,208	0	0	0	0	0	0	100% (VOL)
Power Sales, New Hogan	45,500	45,500	0	0	0	0	0	0	100% (VOL)
Grants/OES Reimbursements	0	0	0	0	0	0	0	0	100% (VOL)
Sale of Surplus Equipment	0	0	0	0	0	0	0	0	100% (VOL)
Copies	0	0	0	0	0	0	0	0	100% (VOL)
Misc. Operating Revenue	3,900	3,900	0	0	0	0	0	0	100% (VOL)
Other District Reimbursements	2,600	2,600	0	0	0	0	0	0	100% (VOL)
Rental Income per schedule	15,808	15,808	0	0	0	0	0	0	100% (VOL)
Total Other Income	**$933,822**	**$933,822**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Net Revenue Requirements	**$5,757,436**	**$5,040,369**	**$358,534**	**$358,534**	**$0**	**$0**	**$0**	**$0**	

Calaveras County Water District
Sewer Utility - 500
Cost of Service Summary
Exhibit 7 - Allocation by Component

Classification Components	2018-19	Residential	Non-Residential	*Allocation Factor*
Volume	$5,040,369	$4,345,479	$694,890	(VOL)
Bio-Oxygen Demand	$358,534	$307,670	$50,864	(BOD)
Suspended Solids	$358,534	$307,218	$51,315	(TSS)
Customer Related				
Actual Customer	$0	$0	$0	(AC)
Weighted for Cust. Acctg.	0	0	0	(WCA)
Total Customer Related	$0	$0	$0	
Revenue Related	$0	$0	$0	(RR)
Direct Assignment	$0	$0	$0	(DA)
NET REVENUE REQUIREMENT	**$5,757,436**	**$4,960,367**	**$797,069**	

Calaveras County Water District
Sewer Utility - 500
Cost of Service Summary
Exhibit 7 - Summary of Cost Allocation

	2018-19 Total	Residential	Non-Residential	*Source*
Rate Revenue	$5,530,679	$4,751,335	$779,343	
Revenues at Present Rates	$5,530,679	$4,751,335	$779,343	
Allocated Revenue Requirement	$5,757,436	$4,960,367	$797,069	
Subtotal Balance/(Deficiency) of Funds	($226,758)	($209,032)	($17,726)	
% Change Over Present Rates	**4.1%**	**4.4%**	**2.3%**	

[1] Residential includes residential and mini-minimum
[2] Commercial includes res/business, business, multi-business

Calaveras County Water District
Sewer Utility - 500
Cost of Service Summary
Exhibit 7 - Average Unit Cost

	2018-19 Total	Residential	Non-Residential	*Source*
Volume Costs - $/100 CF	$36.71	$36.71	$36.71	
Strength				
Bio-Oxygen Demand Costs - $/100 CF	$2.61	$2.60	$2.69	
Total Suspended Solids Costs - $/100 CF	$2.61	$2.60	$2.69	
Total - $/100 CF	$41.93	$41.91	$42.08	
Customer - $ / customer / month	$0.00	$0.00	$0.00	
Rate Rev $/100 CF	$40.28	$40.14	$41.17	
Allocated Rev Req $/100 CF	$41.93	$41.90	$42.11	
Rate Per Customer	92.13	89.95	88.12	
Basic Data				
Annualized Water Flows - 100 CF	137,306	118,376	18,930	
No. of Customers	5,208	4,474	734	

Calaveras County Water District
Sewer Utility - 500
Detailed Revenue Calculation - Present Rates
July 1, 2014 Resolution

		7/1/2015	8/1/2015	9/1/2015	10/1/2015	11/1/2015	12/1/2015	1/1/2016	2/1/2016	3/1/2016	4/1/2016	5/1/2016	6/1/2016	TOTAL
Residential														
# of Accounts		2,973	1,485	2,980	1,610	3,059	1,481	2,991	1,366	2,935	1,479	2,996	1,487	
Operating	$135.00	2,973	1,485	2,980	1,610	3,059	1,481	2,991	1,366	2,935	1,479	2,996	1,487	4,474
Capital R&R	37.32	2,973	1,485	2,980	1,610	3,059	1,481	2,991	1,366	2,935	1,479	2,996	1,487	4,474
Total Operating Revenues		$401,392	$200,480	$402,329	$217,293	$412,922	$199,966	$403,794	$184,432	$396,261	$199,685	$404,441	$200,757	$3,623,753
Total Capital R&R Revenues		110,963	55,421	111,222	60,070	114,150	55,279	111,627	50,985	109,544	55,202	111,806	55,498	1,001,766
Total Residential Revenues		$512,355	$255,901	$513,551	$277,363	$527,072	$255,245	$515,421	$235,417	$505,805	$254,887	$516,247	$256,255	$4,625,519
Residential-Multi														
# of Accounts		1	9	1	9	1	9	1	9	1	9	1	9	
Operating	$135.00	12	112	12	112	12	112	12	112	12	112	12	112	124
Capital R&R	37.32	12	112	12	112	12	112	12	112	12	112	12	112	124
Total Operating Revenues		$1,620	$15,120	$1,620	$15,120	$1,620	$15,120	$1,620	$15,120	$1,620	$15,120	$1,620	$15,120	$100,442
Total Capital R&R Revenues		448	4,180	448	4,180	448	4,180	448	4,180	448	4,180	448	4,180	27,766
Total Residential-Multi Revenues		$2,068	$19,300	$2,068	$19,300	$2,068	$19,300	$2,068	$19,300	$2,068	$19,300	$2,068	$19,300	$128,208

Calaveras County Water District
Sewer Utility - 500
Detailed Revenue Calculation - Present Rates
July 1, 2014 Resolution

		7/1/2015	8/1/2015	9/1/2015	10/1/2015	11/1/2015	12/1/2015	1/1/2016	2/1/2016	3/1/2016	4/1/2016	5/1/2016	6/1/2016	TOTAL
Commercial														
# of Accounts		276	256	296	276	296	266	291	257	291	265	294	265	
Operating	$135.00	276	256	296	276	296	266	291	257	291	265	294	265	555
Capital R&R	37.32	276	256	296	276	296	266	291	257	291	265	294	265	555
Total Operating Revenues		$37,305	$34,620	$40,024	$37,217	$39,919	$35,893	$39,254	$34,697	$39,287	$35,745	$39,726	$35,774	$449,463
Total Capital R&R Revenues		10,313	9,571	11,064	10,288	11,036	9,923	10,851	9,592	10,861	9,882	10,982	9,890	124,251
Total Commercial Revenues		$47,618	$44,191	$51,088	$47,505	$50,955	$45,816	$50,105	$44,289	$50,148	$45,627	$50,708	$45,664	$573,714
Other														
# of Accounts		6	4	6	4	6	4	6	4	6	4	6	4	
Operating	$135.00	35	20	35	20	35	20	35	20	35	20	35	20	55
Capital R&R	37.32	35	20	35	20	35	20	35	20	35	20	35	20	55
Total Operating Revenues		$4,773	$2,641	$4,773	$2,641	$4,773	$2,641	$4,773	$2,641	$4,773	$2,641	$4,773	$2,641	$44,486
Total Capital R&R Revenues		1,320	730	1,320	730	1,320	730	1,320	730	1,320	730	1,320	730	12,298
Total Other Revenues		$6,093	$3,371	$6,093	$3,371	$6,093	$3,371	$6,093	$3,371	$6,093	$3,371	$6,093	$3,371	$56,784