

CITY OF ANDERSON

Water Rate Study 2020

Final Report
November 2020



LECHOWICZ + TSENG
MUNICIPAL CONSULTANTS

PO Box 3065
Oakland, CA 94609
(510) 545-3182
www.LTmuniconsultants.com

TABLE OF CONTENTS

SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY	3
1.1 Background	3
1.2 Requirements of Proposition 218	3
1.3 Rate Study Process.....	4
1.4 Proposed Rates and Bill Impacts.....	5
1.5 Utility Bill Survey	6
SECTION 2: CURRENT RATES AND WATER SYSTEM OVERVIEW	8
2.1 Current Rates	8
2.1.1 Fixed Meter Charges	8
2.1.2 Consumption Charges	8
2.2 Annual Water Meter Fee	9
2.3 Water System Overview	10
2.3.1 Water Customers	10
2.3.2 Water Consumption.....	12
2.3.3 Billed vs. Unbilled Water Consumption	12
SECTION 3: WATER FINANCIAL PLAN.....	14
3.1 Water Revenues.....	14
3.1.1 Fixed vs. Consumption Revenues.....	15
3.2 Water Expenses	15
3.2.1 Operating & Maintenance Expenses	15
3.2.2 Water Capital Improvement Program	16
3.3 Operating Deficit.....	17
3.4 Water Fund Reserves	19
3.5 Cash Flow Projections and Assumptions	19
3.5.1 Cash Flow Projection with No Rate Increases.....	19
3.5.2 Cash Flow Projection with Recommended Increases	21
1. Fund operating costs.....	21
2. Fund capital costs.....	21
3. Eliminate the operating deficit by 2024/25	21
4. Meet the fund balance reserve target by 2024/25	21
SECTION 4: COST ALLOCATION	25

4.1	Methodology.....	25
4.2	Cost Allocation	25
SECTION 5: RATE DESIGN		27
5.1	Billing Units	27
5.1.1	Meter Equivalents.....	27
5.2	Unit Cost Calculation.....	28
5.3	Proposed Fixed Meter Charges.....	29
5.4	Proposed Consumption Charges.....	30
5.4.1	Outside City Consumption Charges	30
5.5	Five-Year Schedule of Proposed Rates.....	31
5.6	Bill Impacts.....	32
SECTION 6: APPENDIX		34

SECTION 1: INTRODUCTION AND EXECUTIVE SUMMARY

1.1 Background

The City of Anderson (City) engaged Lechowicz & Tseng Municipal Consultants in 2018 to complete a water rate study. The primary objective is to recommend water rates which ensure the future financial health and stability of the City's water enterprise fund, while minimizing the impact on customers. This study covers the five-year period from 2021/2022 through 2025/2026.

The City of Anderson provides water service to a population of about 10,500 with approximately 3,500 active service connections. The City's monthly water rates have not been updated since December 2015. Since then, water expenses have grown to exceed revenues, resulting in an operating deficit. Without rate increases, the Water Fund will deplete its reserves within the next 5 years.

1.2 Requirements of Proposition 218

Proposition 218, the "Right to Vote on Taxes Act", was approved by California voters in November 1996 and is codified as Articles XIII C and XIII D of the California Constitution. Proposition 218 establishes requirements for imposing any new or increasing any existing property-related fees and charges. For many years, there was no legal consensus on whether water service fees met the definition of "property-related fees." In July 2007, the California Supreme Court essentially confirmed that Proposition 218 applies to water service fees.

The City must follow the procedural requirements of Proposition 218 for all water rate increases. These requirements include:

1. **Noticing Requirement** – The City must mail a notice of the proposed rate increases to all affected property owners or ratepayers. The notice must specify the amount of the fee, the basis upon which it was calculated, the reason for the fee, and the date/time/location of a public rate hearing at which the proposed rates will be considered/adopted.
2. **Public Hearing** – The City must hold a public hearing prior to adopting the proposed rate increases. The public hearing must be held not less than 45 days after the required notices are mailed.
3. **Rate Increases Subject to Majority Protest** – At the public hearing, the proposed rate increases are subject to majority protest. If more than 50% of affected property owners or ratepayers submit written protests against the proposed rate increases, the increases cannot be adopted.

Proposition 218 also established substantive requirements that apply to water rates and charges, including:

1. **Cost of Service** – Revenues derived from the fee or charge cannot exceed the funds required to provide the service. In essence, fees cannot exceed the "cost of service".

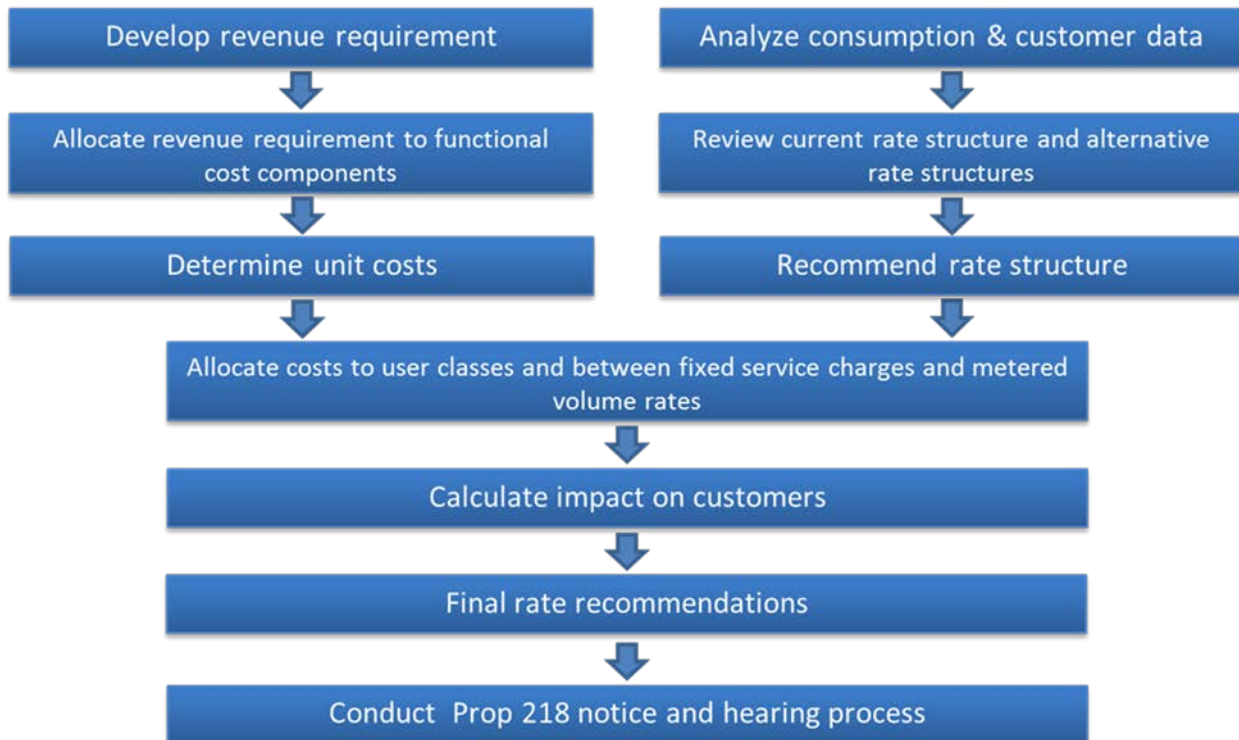
2. **Intended Purpose** – Revenues derived from the fee or charge can only be used for the purpose for which the fee was imposed.
3. **Proportional Cost Recovery** – The amount of the fee or charge levied on any customer shall not exceed the proportional cost of service attributable to that customer.
4. **Availability of Service** – No fee or charge may be imposed for a service unless that service is used by, or immediately available to, the owner of the property.
5. **General Government Services** – No fee or charge may be imposed for general governmental services where the service is available to the public at large.

Charges for water are exempt from additional voting requirements of Proposition 218, provided the charges do not exceed the cost of providing service and are adopted pursuant to the procedural requirements of Proposition 218.

1.3 Rate Study Process

This section details the development of the City’s water rates via the Proposition 218 process as shown in the following figure.

Figure 1: Comprehensive Cost of Service Study Process



The following is a brief description of the rate study process:

- **Revenue Requirement** – The revenue requirement is analyzed via a financial plan developed from the Operating and Capital Budget. Based on the best information currently available, the financial plan incorporates projected operation and maintenance costs, capital expenditures, debt service, and growth to estimate annual revenue requirements. The plan serves as a roadmap for funding the City’s future operating and capital programs while maintaining long-term fiscal stability.
- **Cost of Service Allocation** – The cost of service process builds on the financial plan analysis and assigns water system costs to functional cost components: base, extra, meters and services, and customer service.
- **Rate Design** – Rate design involves developing a rate structure that proportionately recovers costs from customers. Final rate recommendations are designed to (a) fund the utility’s short- and long-term costs of providing service; (b) proportionately allocate costs to all customers and customer classes; and (c) comply with the substantive requirements of Proposition 218.

1.4 Proposed Rates and Bill Impacts

The findings and recommendations presented in this report were developed with substantial input from City staff. Based on an analysis of the Water Fund’s financial statements, budgets, and capital improvement plan, the proposed water rate adjustments are 5% annual increases through 2024/25. These increases are the minimum increases needed to a) recover the full cost of service, b) maintain the current water system, b) eliminate the operating deficit, and 4) retain prudent fund reserves.

As shown on Table 1, the first rate increase is proposed to go into effect February 1, 2021, with subsequent increases proposed for January 1 each year thereafter. The current rate structure is proposed to remain unchanged.

**Table 1: Proposed Monthly Water Rates
City of Anderson
Water Rate Study 2020**

Meter Size	Current	PROPOSED				
		2020/21	2021/22	2022/23	2023/24	2024/25
FIXED METER CHARGE						
5/8" and 3/4"	\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
1"	\$15.24	\$16.33	\$17.02	\$17.84	\$18.63	\$19.46
1-1/2"	\$24.20	\$24.62	\$25.67	\$26.89	\$28.08	\$29.32
2"	\$36.18	\$34.56	\$36.05	\$37.75	\$39.42	\$41.16
3"	\$48.16	\$61.06	\$63.73	\$66.71	\$69.66	\$72.74
4"	\$102.12	\$90.88	\$94.87	\$99.29	\$103.68	\$108.26
6"	\$147.51	\$173.72	\$181.37	\$189.79	\$198.18	\$206.92
8"	\$221.89	\$273.12	\$285.17	\$298.39	\$311.58	\$325.32
CONSUMPTION CHARGE - OVER 1,000 CF						
City Charge for Usage Over 1,000 CF	\$0.01192	\$0.01277	\$0.01340	\$0.01408	\$0.01478	\$0.01552
Outside City Charge for Usage Over 1,000 CF	\$0.01227	\$0.01315	\$0.01381	\$0.01450	\$0.01523	\$0.01599

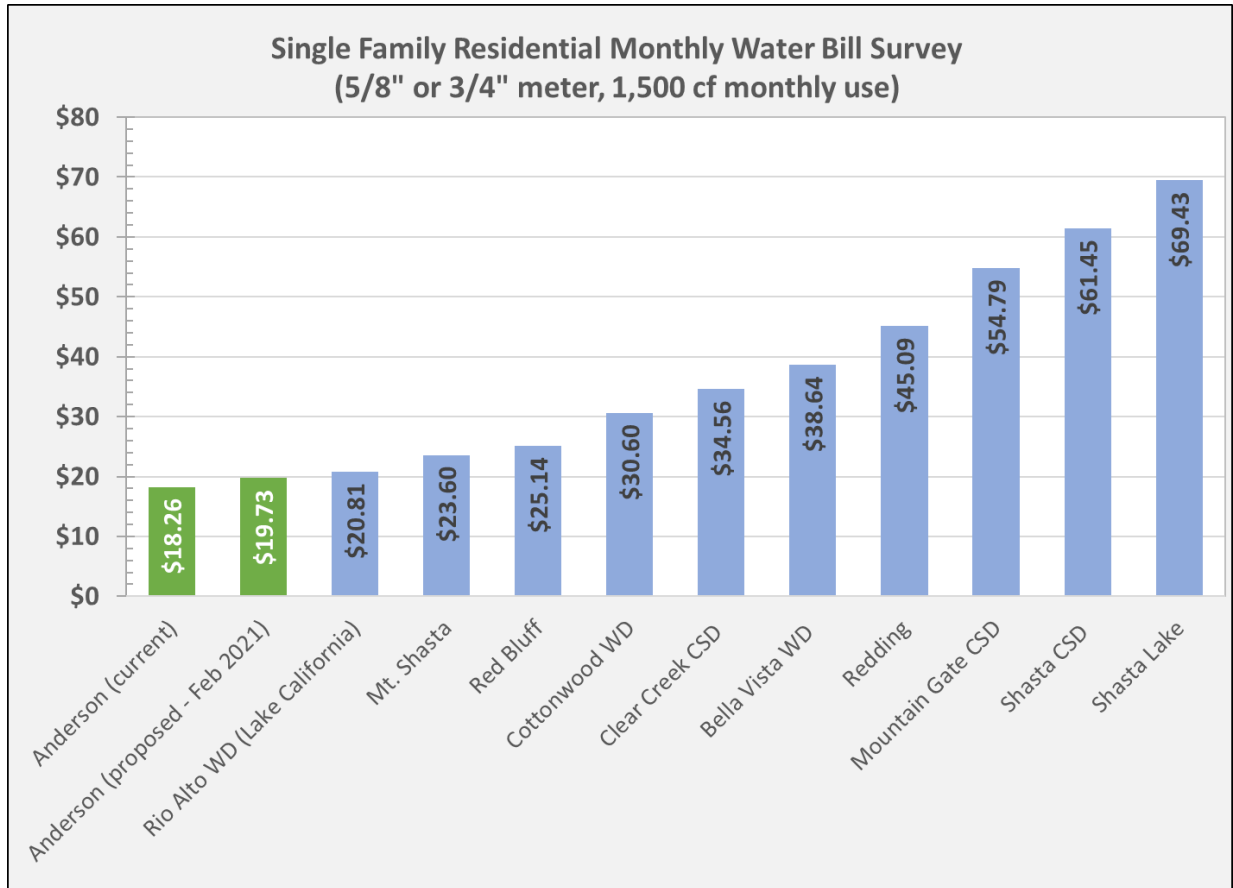
CF = cubic feet. 1 CF = 7.48 gallons

1.5 Utility Bill Survey

The chart below compares the current water bill for an average single family residential customer to those of other regional agencies, including Redding, Shasta Lake, and Clear Creek. The City's typical single family residential customer has a 5/8" or 3/4" meter and uses approximately 1,500 cf of water per month on average. The City's current bill is the lowest of all surveyed agencies and will remain as such following the proposed rate adjustment. Based on the proposed rate adjustments, the average single family residential customer using 1,500 cf per month will see a \$1.15 monthly bill increase in 2020/21.

It is also important to note that many of the surveyed agencies are also likely facing impending rate increases.

Figure 2: Single Family Residential Bill Survey



SECTION 2: CURRENT RATES AND WATER SYSTEM OVERVIEW

This section provides an overview of the current water rates, the City's customer base, and water usage statistics.

2.1 Current Rates

Table 2 summarizes historic and current water rates since 2010. Water rates have not been increased since 2015. The City bills customers for water service on a monthly basis. The City's current rate structure includes two components – (a) Fixed Meter Charges and (b) Consumption Charges.

2.1.1 Fixed Meter Charges

All customers, residential and non-residential, are charged the same fixed charges based on their meter size. The fixed charge is levied regardless of water consumption and recognizes that even when a customer does not use any water, the City incurs fixed costs associated with maintaining the ability or readiness to serve each connection.

Meter size represents the estimated demand that each customer can place on the water system. A significant portion of a water system's design, and therefore, the utility's operating and capital costs are associated with meeting capacity requirements. The City's base meter size is a 5/8" or 3/4" meter. Larger meters are charged based on their estimated capacity represented by meter ratios recommended by the American Water Works Association (AWWA). These meter capacity ratios provide a basis for charging customers proportional to the capacity that is reserved for them in the water system.

Fixed charges should be designed to recover the City's fixed expenses and currently generate about 44.0% of total water rate revenues. Fixed costs can include staffing, customer service, debt service, system maintenance, and repairs.

2.1.2 Consumption Charges

Customers are charged for metered consumption over 1,000 cf of water per billing period. One cubic foot is equal to 7.48 gallons of water. The City charges a uniform volume rate for all water use above the allotted 1,000 cf. Outside city customers in Wooded Acres are charged a slightly higher volume rate to reflect the additional costs the City incurs to serve properties outside City limits.

The consumption charge is intended to recover costs that vary based on the amount of water used and currently generates roughly 56% of total water rate revenues. Variable expenses can include utilities and chemicals.

**Table 2: Current Monthly Water Rates
City of Anderson
Water Rate Study 2020**

Fiscal Year Effective Date	2010/11 Oct. 1, 2010	2011/12 Oct. 1, 2011	2012/13 Oct. 1, 2012	2013/14 Oct. 1, 2013	2014/15 Dec. 1, 2014	2015/16 Dec. 1, 2015
MONTHLY FIXED CHARGES						
<u>Meter Size</u>						
5/8" and 3/4"	\$12.36	\$12.61	\$10.83	\$11.15	\$11.71	\$12.30
1"	\$15.34	\$15.64	\$13.42	\$13.82	\$14.51	\$15.24
1-1/2"	\$24.34	\$24.83	\$21.31	\$21.95	\$23.05	\$24.20
2"	\$36.39	\$37.12	\$31.86	\$32.82	\$34.46	\$36.18
3"	\$48.44	\$49.41	\$42.42	\$43.69	\$45.87	\$48.16
4"	\$102.71	\$104.77	\$89.93	\$92.63	\$97.26	\$102.12
6"	\$148.37	\$151.34	\$129.90	\$133.80	\$140.49	\$147.51
8"	\$223.19	\$227.65	\$195.40	\$201.26	\$211.32	\$222.89
CONSUMPTION CHARGE - OVER 1,000 CF						
City Charge for Usage Over 1,000 CF	\$0.0100	\$0.0103	\$0.01050	\$0.01081	\$0.01135	\$0.01192
Outside City Charge for Usage Over 1,000 CF	\$0.0102	\$0.0105	\$0.01081	\$0.01113	\$0.01169	\$0.01227

Source: Resolution Nos. 10-29, 12-42, and 14-53
CF = cubic feet. 1 CF = 7.48 gallons

2.2 Annual Water Meter Fee

The City levies a separate Water Meter Fee on the property tax roll based on meter size. Table 3 shows (a) the Water Meter Fee by meter size, (b) the number of customers by meter size (based on 2019 data), and (c) total annual Water Meter Fee revenues. These fees generate approximately \$46,000 each year which is used to maintain and repair water meters and pipelines. This study does not propose any modifications to the Water Meter Fee.

Table 3: Annual Water Meter Fee on Property Tax
City of Anderson
Water Rate Study 2020

Meter Size	Annual Water Meter Fee	No. of Customers	Annual Meter Fee Revenue
5/8" and 3/4"	\$12.00	3,156	\$37,872
1"	\$18.00	213	\$3,834
1-1/2"	\$20.00	44	\$880
2"	\$24.00	67	\$1,608
3"	\$36.00	18	\$648
4"	\$48.00	18	\$864
6"	\$72.00	2	\$144
8"	\$96.00	<u>0</u>	<u>\$0</u>
Total		3,518	\$45,850

2.3 Water System Overview

The City's water supply is provided via ten groundwater wells that draw water from the Anderson Subbasin. The City fully owns and operates its water distribution system which includes over 46 miles of piping, two storage reservoirs, as well as chlorination and pumping facilities.

2.3.1 Water Customers

The water utility about 3,500 were active accounts, as shown in Table 4. Table 4 also shows total water consumption by customer class for 2019, including that which is not billed under the 1,000 cf allotment. The City serves a primarily residential customer base, with residential customers inside the City accounting for 82% of all water accounts and 65% of all water use in 2019. About 230 of the City's customers live outside the City of Anderson in Wooded Acres.

Table 4: No. of Accounts & Consumption by Customer Class for 2019
City of Anderson
Water Rate Study 2020

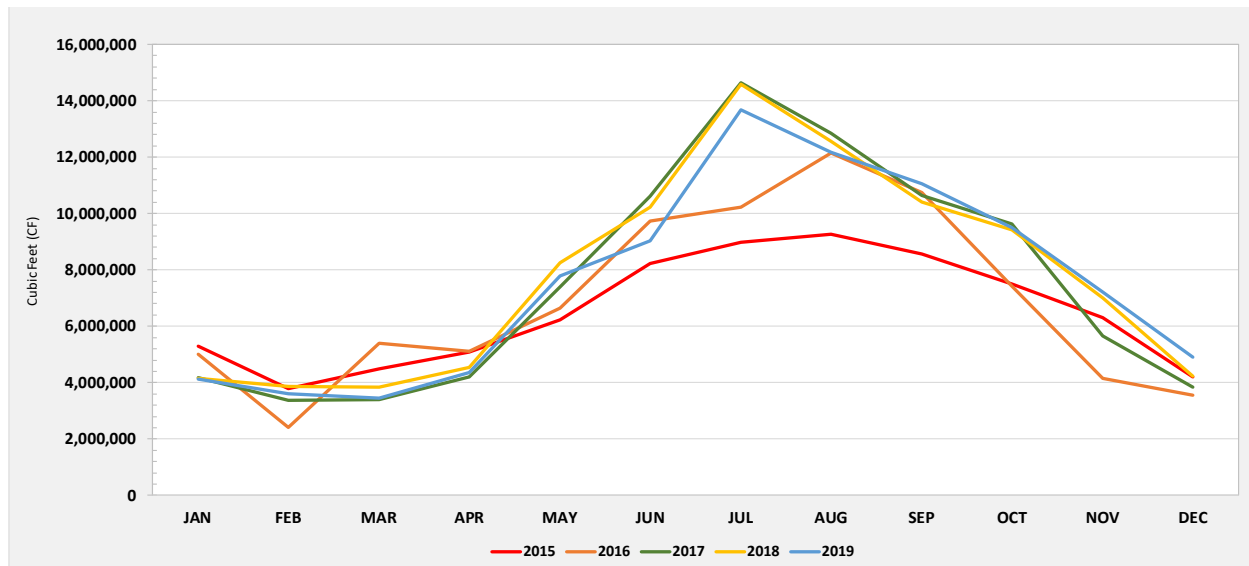
	Accounts		Consumption	
	#	%	cf	%
RESIDENTIAL				
Single Family	2,788	79%	48,428,608	53%
Apartments/Mobile Parks	<u>90</u>	<u>3%</u>	<u>10,923,810</u>	12%
Total Residential	2,878	82%	59,352,418	65%
NON-RESIDENTIAL				
Commercial	313	9%	14,116,457	16%
Churches	13	0%	1,477,578	2%
Government	49	1%	2,252,554	2%
Industrial	20	1%	717,587	1%
<u>Schools</u>	<u>12</u>	<u>0%</u>	<u>2,861,539</u>	<u>3%</u>
Total Non-Residential	407	12%	21,425,715	24%
WOODED ACRES	233	7%	10,114,102	11%
TOTAL	3,518	100%	90,892,235	100%

* Based on 2019 data

2.3.2 Water Consumption

Since 2015, total consumption has averaged approximately 86,981,000 cf per calendar year. Figure 3 below illustrates the City’s total water use by month since 2015 and comprises all metered water use, including that which is not billed under the 1,000 cf monthly water allotment. The City’s hot and dry summers results in significantly higher water consumption during the summer months, with peak demand occurring in July during each of the past 3 years.

Figure 3: Total Water Use by Month



TOTAL WATER CONSUMPTION (CF)														
CY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL	% Change
2015	5,295,763	3,785,911	4,489,304	5,074,731	6,239,544	8,237,443	8,978,521	9,273,603	8,553,870	7,490,082	6,305,823	4,216,139	77,940,733	
2016	5,019,468	2,418,042	5,389,851	5,108,353	6,643,510	9,744,407	10,238,012	12,150,818	10,743,363	7,410,887	4,141,076	3,563,374	82,571,161	5.9%
2017	4,177,727	3,385,314	3,386,774	4,215,407	7,385,951	10,616,661	14,628,519	12,852,544	10,629,230	9,624,508	5,661,559	3,848,467	90,412,659	9.5%
2018	4,151,868	3,866,521	3,852,891	4,530,149	8,253,930	10,218,079	14,588,777	12,569,675	10,407,059	9,413,014	7,000,958	4,235,289	93,088,210	3.0%
2019	4,130,328	3,594,437	3,463,780	4,365,927	7,797,104	9,019,900	13,680,480	12,160,559	11,055,214	9,494,158	7,222,457	4,907,891	90,892,235	-2.4%

2.3.3 Billed vs. Unbilled Water Consumption

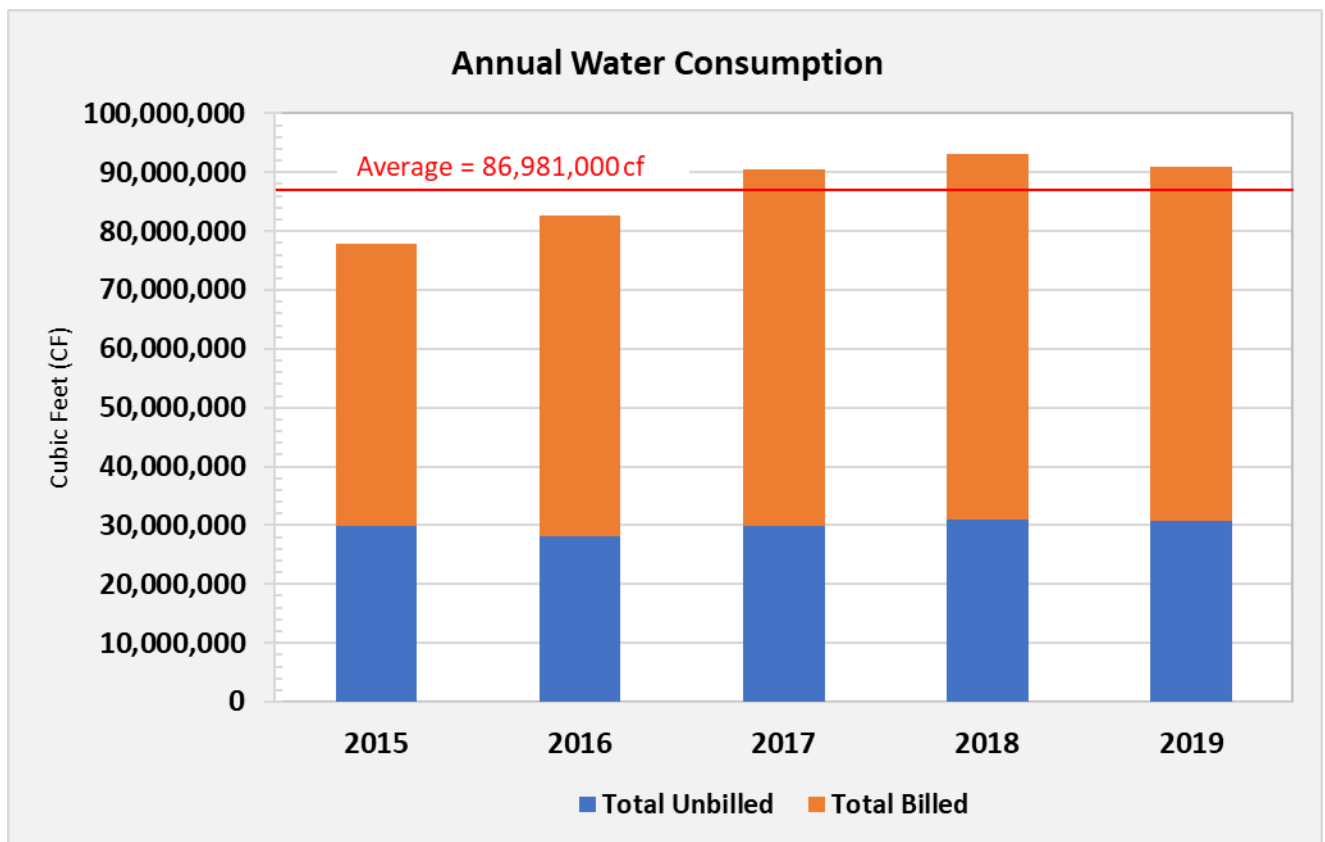
Table 5 compares actual metered consumption to billed consumption since 2015. The City’s current rate structure only bills usage over 1,000 cf per month. With the allotment, the City has billed approximately 66.0% of its metered water use under its consumption charges over the past five years. To minimize the impact to customers, the City does not want to change the monthly water allotment for this study period.

Table 5: Billed vs. Unbilled Consumption
City of Anderson
Water Rate Study 2020

Year	CONSUMPTION (CF)			
	Total Delivered	Total Billed	Total Unbilled	% Billed
2015	77,940,733	48,165,769	29,774,964	61.8%
2016	82,571,161	54,344,145	28,227,016	65.8%
2017	90,412,659	60,574,573	29,838,086	67.0%
2018	93,088,210	62,155,595	30,932,615	66.8%
2019	90,892,235	60,206,104	30,686,131	66.2%

Figure 4 graphically depicts the City’s annual water usage since 2015.

Figure 4: Annual Water Use



SECTION 3: WATER FINANCIAL PLAN

Proposition 218 requires that utility rates be based on the reasonable cost of providing service to customers. The cost of service includes annual operating expenses, debt service payments, capital projects, repairs and replacements, and the accumulation of appropriate reserves. The cost of service was developed based on the 2020/21 adopted budget, capital projects developed by staff, and reserve recommendations based on industry standard practice.

3.1 Water Revenues

Table 6 summarizes water revenues since 2016/17. In total, the City expects to collect about \$1,440,880 in total water revenues in 2020/21, of which about 90% will be collected from water sales. Other revenue sources include investment and interest earnings, late fees, and capital fees.

Table 6: Water Revenues
City of Anderson
Water Rate Study 2020

	Actual			Proposed	
	2016/17	2017/18	2018/19	2019/20	2020/21
WATER SALES					
Residential	\$849,792	\$1,023,598	\$1,005,722	\$989,784	\$975,000
Commercial	238,399	277,884	279,233	269,177	265,000
Construction	280	360	290	429	430
Hydrants	9,684	5,445	13,963	12,103	12,000
Ready to Serve	38,186	35,794	36,510	38,552	38,500
Connection	6,045	5,255	4,005	5,145	5,000
Subtotal	1,142,386	1,348,336	1,339,723	1,315,190	1,295,930
<i>Percent Change</i>		18%	-1%	-2%	-1%
Investment Earnings	310	4,768	13,809	3,000	3,000
Rents	9,000	9,000	10,350	9,226	9,000
Late/Turn On Fees	42,629	48,147	47,860	46,132	45,000
Other	610	908	470	564	500
Interest Earnings	566	21,817	44,680	667	650
Other Revenue	6,721	8,544	7,076	6,971	6,800
Subtotal	59,836	93,184	124,245	66,560	64,950
<i>Percent Change</i>		56%	33%	-46%	-2%
WATER CAPITAL FEES	44,889	112,935	109,465	84,000	80,000
<i>Percent Change</i>		152%	-3%	-23%	-5%
TOTAL WATER REVENUES	\$1,247,111	\$1,554,455	\$1,573,433	\$1,465,750	\$1,440,880
<i>Percent Change</i>		25%	1%	-7%	-2%

Source: Budget 2020/21

3.1.1 Fixed vs. Consumption Revenues

shows the percentage of revenue collected from fixed and consumption charges over the past three calendar years. Fixed charges are designed to recover the City’s fixed expenses that do not vary based on water use and generate about 44.0% of total water rate revenues. The consumption charges are designed to recover costs that vary based on the amount of water used and currently generate roughly 56.0% of total water rate revenues.

**Table 7: Fixed vs. Consumption Revenues
City of Anderson
Water Rate Study 2020**

	2017/18		2018/19		2019/20	
	Revenue	% of Total	Revenue	% of Total	Revenue	% of Total
Fixed Charges	\$585,331	43.4%	\$577,961	43.1%	\$582,646	44.30%
Consumption Charges	\$763,005	56.6%	\$761,762	56.9%	\$732,544	55.70%
Total Water Sales	\$1,348,336	100.0%	\$1,339,723	100.0%	\$1,315,190	100.00%

3.2 Water Expenses

The Water Fund’s expenses including operating expenses, capital projects, repairs and replacements, debt service, and contributions to reserves comprise the total cost of service to be recovered from water rates.

3.2.1 Operating & Maintenance Expenses

Table 8 summarizes the water utility’s expenses since 2016/17. Total operating and maintenance expenses are projected at \$1.6 million for 2020/21. These expenses include salaries and benefits, debt service, utilities, and customer service charges.

Table 8: Water Expenses
City of Anderson
Water Rate Study 2020

	Actual 2016/17	Approved 2017/18	Approved 2018/19	Approved 2019/20	Proposed 2020/21
WATER ADMIN & DEBT SERVICE					
Salaries & Benefits	\$81,723	\$86,355	\$89,669	\$98,597	\$112,902
Vacation & Overtime Cash Outs	3,000	3,000	3,000	3,000	3,060
Special Departmental Expense	300	300	306	300	300
Professional & Special Services	12,000	12,000	12,000	12,000	12,000
Insurance & Bonds	6,592	6,592	6,592	6,592	6,592
Uncollectible Debt	2,000	2,000	2,000	2,000	2,000
Customer Service Charges	321,988	336,855	362,353	380,416	380,416
Admin Fee	65,232	65,232	73,309	70,836	70,836
Depreciation	229,729	229,729	230,174	230,174	233,175
Debt Service (CalPERS Side Fund)	22,524	22,524	24,988	25,795	26,601
Subtotal Water Admin & Debt Service	745,088	764,587	804,391	829,710	847,882
Percent Change		3%	5%	3%	2%
WATER & SUPPLY DISTRIBUTION					
Salaries & Benefits	245,420	231,872	236,598	246,856	270,368
Office Expenses	600	600	600	600	600
Special Departmental Expense	35,000	35,000	35,000	50,000	50,000
Small Tools	800	800	800	800	800
Clothing Allowance	1,200	1,200	1,200	1,200	1,200
Communication & Alarms	14,000	14,000	14,000	14,000	14,000
Utilities	140,000	140,000	140,000	200,000	200,000
Rents & Leases	1,000	1,000	1,000	1,000	1,000
Maintenance of Buildings & Grounds	2,000	2,000	2,000	2,000	2,000
Professional & Special Services	28,000	28,000	28,000	40,000	40,000
Membership/Subscription/Dues	1,100	1,100	1,100	1,100	1,100
Miscellaneous	500	500	500	500	500
Public Works Labor Charges	74,621	84,671	96,242	99,286	99,286
Computer Charges	3,429	4,033	4,194	4,285	4,285
Vehicle Maintenance	38,312	71,983	64,762	48,273	48,273
Water Projects (Reservoir Maintenance)	70,000	70,000	50,000	50,000	50,000
Machinery & Equipment	0	0	0	40,000	0
Subtotal Water & Supply Distribution	655,982	686,759	675,996	799,900	783,412
Percent Change		5%	-2%	18%	-2%
TOTAL WATER EXPENSES	\$1,401,070	\$1,451,346	\$1,480,387	\$1,629,610	\$1,631,294
Percent Change		4%	2%	10%	0%

Source: Budget 2020/21

3.2.2 Water Capital Improvement Program

Table 10 shows the Water Capital Improvement Plan (CIP) through 2035 totaling \$3,156,800. Projects are divided between Short-Term Improvements (FY2021-2025) and Long-Term Improvements (FY2026-2035). For the cash flow projections, the average annual cost for the Short-Term Improvements is

\$175,200 over the next 5 years. Projects include more critical repairs, such as replacing deteriorating water mains, upgrading the Volonte Well, and replacing fire hydrants. These projects are needed to maintain water system reliability and to rehabilitate the aging water distribution system.

The costs for the Long-Term Improvements are averaged over a 10-year period from 2025/26 through 2034/35 at \$253,422 each year. These projects are included for informational purposes and will be completed beyond the scope of this 5-year study.

3.3 Operating Deficit

Based on the 2020/21 budget, total expenses will continue to exceed revenues, resulting in an operating deficit as summarized in Table 9. Without rate increases, the operating deficit will continue to grow as the Water Fund draws down reserves to cover the losses.

**Table 9: Net Revenues
City of Anderson
Water Rate Study 2020**

	Actual				Proposed 2020/21
	2016/17	2017/18	2018/19	2019/20	
Water Revenues (Table 7)	\$1,247,111	\$1,554,455	\$1,573,433	\$1,465,750	\$1,440,880
Water Expenses (Table 8)	\$1,401,070	\$1,451,346	\$1,480,387	\$1,629,610	\$1,631,294
Net Revenues	(\$153,959)	\$103,109	\$93,046	(\$163,860)	(\$190,414)

**Table 10: Water System Capital Improvement Program
City of Anderson
Water Rate Study 2020**

Item No.	Description	2006 COA Master Plan Identification Point	Length in Feet or Quantity	Units	March 2018 Project Cost(\$) ⁽¹⁾	August 2020 Project Cost(\$) ⁽¹⁾	Comments
SHORT TERM IMPROVEMENTS FY2021-2025							
1	REPAINT HIGH SCHOOL RESERVOIR EXTERIOR	9	1	LS	\$234,000	\$244,600	Maintenance of existing steel reservoir
2	ABANDON OX YOKE WELL 11	48	1	LS	\$20,000	\$20,900	Reduce City maintenance and power costs.
3	RENOVATE OX YOKE WELL 12 ELECTRICAL & SCADA SYSTEMS	48	1	LS	\$26,000	\$27,200	Incorporate Well 12 into SCADA system.
4	REPLACE EXISTING 3" STEEL PIPE w/ 8" ALONG DOUGLAS ST. FROM FERRY ST TO SOUTH ST.	-	800	LF	\$170,000	\$177,700	Eliminate deteriorating undersized 3" steel water main to improve fire flow and reliability.
5	REPLACE EXISTING 6" STEEL PIPE w/ 8" ALONG NORTH ST. FROM SILVER TO DOUGLAS	2-3	350	LF	\$108,000	\$112,900	Eliminate deteriorating undersized 6" steel water main to improve fire flow and reliability.
6	RENOVATE VOLONTE WELL ELECTRICAL & MECHANICAL SYSTEMS	34	1	LS	\$228,000	\$238,300	Upgrade electrical controls, replace flow meter, replace control valve, replace well pump and motor. Increase efficiency & reliability.
7	ADD/REPLACE FIRE HYDRANTS	-	5	EA	\$52,000	\$54,400	Strengthen fire fighting capabilities
Short Term Subtotal					\$838,000	\$876,000	
<i>Average Annual Cost Over 5 Years</i>					<i>\$167,600</i>	<i>\$175,200</i>	
LONG TERM IMPROVEMENTS FY2026-2035							
1	INSTALL 10" MAIN ALONG OAK ST. FROM MILL ST. TO TORMEY DRAIN	17-18	950	LF	\$212,000	\$221,600	Increase fire fighting capabilities in the northern Anderson Area.
2	REPLACE EXISTING 3" STEEL PIPE w/ 8" ALONG DOUGLAS ST. FROM FERRY ST TO SOUTH ST.	3-4	2250	LF	\$394,000	\$411,800	Eliminate deteriorating undersized 3" steel water main to improve fire flow and reliability.
3	ADD/REPLACE FIRE HYDRANTS	-	5	EA	\$52,000	\$54,400	Strengthen fire fighting capabilities
4	INSTALL 8" MAIN ALONG OX YOKE ROAD FROM HIRSCH CT TO INDUSTRIAL WAY	7-8	600	LF	\$126,000	\$131,700	Increase fire fighting capabilities in the Ox Yoke Industrial park.
5	CONSTRUCT SOUTHERN WATER WELL FACILITY	51	1	LS	\$1,398,000	\$1,461,300	Add redundant water supply to Southern Pressure Zone.
6	REPLACE ANDERSON HEIGHTS RESERVOIR & ADD WEST ST. PRV STATION	1,6	1	LS	\$2,474,000	\$2,586,000	Replace antiquated 1 MG reservoir with 1.4 MG elevated steel reservoir.
Long Term Subtotal					\$4,656,000	\$4,866,800	
<i>Average Annual Cost Over 10 Years</i>					<i>\$465,600</i>	<i>\$486,680</i>	
TOTAL CIP					\$5,494,000	\$5,742,800	

(1) Includes cost for engineering and contingencies (30%). Does not include the cost for land acquisition or financing.

3.4 Water Fund Reserves

As of July 1, 2020, the beginning fund balance for the Water Fund is estimated to be \$600,000. Adequate fund reserves protect the City when faced with unforeseen financial challenges such as emergency expenses and revenue deficits. Fund reserves allow the City to maintain its financial health and positive credit ratings, especially during emergencies. Moreover, funding can be drawn from reserves to supplement rate revenues lost during drought conditions or other unexpected situations. It is acceptable if reserves dip below the target on a temporary basis, provided the City takes action to attain the target over the longer run.

The City's current operating reserve target is 15% of annual operating expenses. L&T recommends the City increase its operating reserve target to 25% of operating expenses plus \$50,000 for capital projects. This target is based on industry standards. Typically, reserve fund targets are at least 25% of annual expenses to account for the fact that it would take an agency roughly 4 months to approve new rate increases under Proposition 218. In addition, most municipalities have a separate capital reserve to fund infrastructure projects and emergency repairs. The cash flow projections show both the current and proposed reserve fund targets.

3.5 Cash Flow Projections and Assumptions

Table 11 and Table 12 show cash flow projections under two scenarios: (1) No Rate Increase and (2) Recommended Rate Increases. The cash flows detailed below include a five-year forecast through 2024/25. The appendix includes ten-year financial projections for planning purposes only.

3.5.1 Cash Flow Projection with No Rate Increases

The projection in Table 11 summarizes the revenues and expenses based on the 2020/21 budget in addition to the reserve fund balances if the City does not implement any rate increases over the next 5 years. The Water Fund is currently operating in a deficit in which expenses exceed revenues (line 41). The cash flow shows that the City will fall to a negative water fund balance by 2023/24 (line 43) without any rate increases. This would mean the City would not be able to keep up with the operating costs of running the water utility or fund needed capital repairs.

Table 11: Water Cash Flow Projection - No Increases
City of Anderson
Water Rate Study 2020

	Years 1 - 5: Proposition 218				
	Budget 2020/21	Projected			
		2021/22	2022/23	2023/24	2024/25
1 Assumptions:					
2 Overall Rate Adjustment	0.0%	0.0%	0.0%	0.0%	0.0%
3 Rate Increase Effective	Feb 1, 2021	Jan 1, 2022	Jan 1, 2023	Jan 1, 2024	Jan 1, 2025
4					
5 BEGINNING FUND BALANCE	\$600,000	\$493,631	\$360,423	\$176,223	(\$65,977)
6					
7 REVENUES					
8 Water Sales (1)	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000
9 Rents	9,000	9,000	9,000	9,000	9,000
10 Late/Turn On Fees	45,000	46,000	47,000	48,000	49,000
11 Interest	3,650	5,000	4,000	2,000	0
12 Other Revenue	7,300	8,000	8,000	8,000	8,000
13 Water Capital Fees	80,000	80,000	80,000	80,000	80,000
14 Total Revenues	<u>1,466,950</u>	<u>1,470,000</u>	<u>1,470,000</u>	<u>1,469,000</u>	<u>1,468,000</u>
15					
16 EXPENSES					
17 <u>Operating & Maintenance</u>					
18 Salaries & Benefits	383,270	399,000	415,000	432,000	449,000
19 Customer Service Charges	380,416	392,000	404,000	416,000	428,000
20 Admin Fee	70,836	73,000	75,000	77,000	79,000
21 Special Departmental Expense	50,000	52,000	54,000	56,000	58,000
22 Utilities	200,000	212,000	225,000	239,000	253,000
23 Professional & Special Services	40,000	41,000	42,000	43,000	44,000
24 Public Works Labor Charges	99,286	102,000	105,000	108,000	111,000
25 Vehicle Maintenance	48,273	50,000	52,000	54,000	56,000
26 Water Projects (Reservoir Maintenance)	50,000	52,000	54,000	56,000	58,000
27 Other Expenses	49,437	51,000	53,000	55,000	57,000
28 Subtotal O&M	<u>1,371,518</u>	<u>1,424,000</u>	<u>1,479,000</u>	<u>1,536,000</u>	<u>1,593,000</u>
29					
30 Capital Improvement Program (CIP)					
31 Short-Term Improvements (FY2021-2025)	175,200	175,200	175,200	175,200	175,200
32 Long-Term Improvements (FY2026-2035)	0	0	0	0	0
33 Subtotal CIP	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>
34					
35 Debt Service					
36 CalPERS Side Fund	26,601	4,008	0	0	0
37 Subtotal Debt Service	<u>26,601</u>	<u>4,008</u>	<u>0</u>	<u>0</u>	<u>0</u>
38					
39 Total Expenses	<u>1,573,319</u>	<u>1,603,208</u>	<u>1,654,200</u>	<u>1,711,200</u>	<u>1,768,200</u>
40					
41 Net Revenues	(106,369)	(133,208)	(184,200)	(242,200)	(300,200)
42					
43 ENDING FUND BALANCE	493,631	360,423	176,223	(65,977)	(366,177)
44					
45					
46 Current Reserve Target (15% of O&M)	205,728	213,600	221,850	230,400	238,950
47 <i>Current Target Met</i>	yes	yes	no	no	no
48					
49 Proposed Reserve Target (25% of O&M + \$50,000)	392,880	406,000	419,750	434,000	448,250
50 <i>Proposed Target Met</i>	yes	no	no	no	no
51					

3.5.2 Cash Flow Projection with Recommended Increases

Over the five-year rate study period, the water rate increases are proposed to meet the following objectives, in order of importance:

1. Fund operating costs
2. Fund capital costs
3. Eliminate the operating deficit by 2024/25
4. Meet the fund balance reserve target by 2024/25

As shown on Table 12, rate revenue increases of 5.0% annually (line 2) are needed to cover expenses and maintain fund reserves over the next 5 years. These increases are necessary to maintain existing City services, perform critical infrastructure repairs, and pay for the costs of supplies and utilities, among other expenses, that have continued to increase since rates were last updated. The first rate increase will go into effect on February 1, 2021 with future rate increases effective January 1 of each year beginning in 2022 through 2025.

The projections are based on the 2020/21 budget and the following assumptions:

Revenues

- Rents, Late Fees, and Other Revenues are increased by 3.0% each year.
- The Interest earnings rate is projected at 1.0% each year.
- Water Capital Fees are estimated at \$80,000 over the study period.
- Growth is estimated at 0.5% each year. No major changes in the customer base are expected through 2024/25.
- Water consumption is based on 2019 usage and is not anticipated to increase over the next 5 years due to conservation.

Expenses

- Salaries & Benefits are increased by 4.0% each year.
- Utilities are increased by 6.0% each year.
- All other expenses increased by 3.0% each year.
- The only debt obligation is a CalPERS Side Fund loan which will be paid off in 2021/22.

With the recommended rate increases, the Water Fund will be net revenue positive by the end of 2023/24 (line 43) and will meet the proposed reserve fund target (line 45) each year. The objective is to recover the full cost of providing water service while minimizing the impact to ratepayers.

Table 12: Water Cash Flow Projection with Rate Increases
City of Anderson
Water Rate Study 2020

	Years 1 - 5: Proposition 218				
	Budget 2020/21	Projected			
		2021/22	2022/23	2023/24	2024/25
1 Assumptions:					
2 Overall Rate Adjustment	5.0%	5.0%	5.0%	5.0%	5.0%
3 Rate Increase Effective	Feb 1, 2021	Jan 1, 2022	Jan 1, 2023	Jan 1, 2024	Jan 1, 2025
4					
5 BEGINNING FUND BALANCE	\$600,000	\$520,631	\$488,423	\$477,223	\$485,023
6					
7 Revenues with July 1 Effective Date	1,381,000	1,450,000	1,523,000	1,599,000	1,679,000
8					
9 REVENUES					
10 Water Sales (1)	1,349,000	1,423,000	1,494,000	1,569,000	1,647,000
11 Rents	9,000	9,000	9,000	9,000	9,000
12 Late/Turn On Fees	45,000	46,000	47,000	48,000	49,000
13 Interest	3,650	5,000	5,000	5,000	5,000
14 Other Revenue	7,300	8,000	8,000	8,000	8,000
15 Water Capital Fees	80,000	80,000	80,000	80,000	80,000
16 Total Revenues	1,493,950	1,571,000	1,643,000	1,719,000	1,798,000
17					
18 EXPENSES					
19 <u>Operating & Maintenance</u>					
20 Salaries & Benefits	383,270	399,000	415,000	432,000	449,000
21 Customer Service Charges	380,416	392,000	404,000	416,000	428,000
22 Admin Fee	70,836	73,000	75,000	77,000	79,000
23 Special Departmental Expense	50,000	52,000	54,000	56,000	58,000
24 Utilities	200,000	212,000	225,000	239,000	253,000
25 Professional & Special Services	40,000	41,000	42,000	43,000	44,000
26 Public Works Labor Charges	99,286	102,000	105,000	108,000	111,000
27 Vehicle Maintenance	48,273	50,000	52,000	54,000	56,000
28 Water Projects (Reservoir Maintenance)	50,000	52,000	54,000	56,000	58,000
29 Other Expenses	49,437	51,000	53,000	55,000	57,000
30 Subtotal O&M	1,371,518	1,424,000	1,479,000	1,536,000	1,593,000
31					
32 Capital Improvement Program (CIP)					
33 Short-Term Improvements (FY2021-2025)	175,200	175,200	175,200	175,200	175,200
34 Long-Term Improvements (FY2026-2035)	0	0	0	0	0
35 Subtotal CIP	175,200	175,200	175,200	175,200	175,200
36					
37 Debt Service					
38 CalPERS Side Fund	26,601	4,008	0	0	0
39 Subtotal Debt Service	26,601	4,008	0	0	0
40					
41 Total Expenses	1,573,319	1,603,208	1,654,200	1,711,200	1,768,200
42					
43 Net Revenues	(79,369)	(32,208)	(11,200)	7,800	29,800
44					
45 ENDING FUND BALANCE	520,631	488,423	477,223	485,023	514,823
46					
47					
48 Current Reserve Target (15% of O&M)	205,728	213,600	221,850	230,400	238,950
49 <i>Current Target Met</i>	yes	yes	yes	yes	yes
50					
51 Proposed Reserve Target (25% of O&M + \$50,000)	392,880	406,000	419,750	434,000	448,250
52 <i>Proposed Target Met</i>	yes	yes	yes	yes	yes
53					

Figure 5 depicts the projected revenues and expenses with the 5% annual rate increases. The red line represents total water revenues which will fully cover expenses by the end of 2023/24.

Figure 5: Projected Revenues and Expenses with Rate Increases

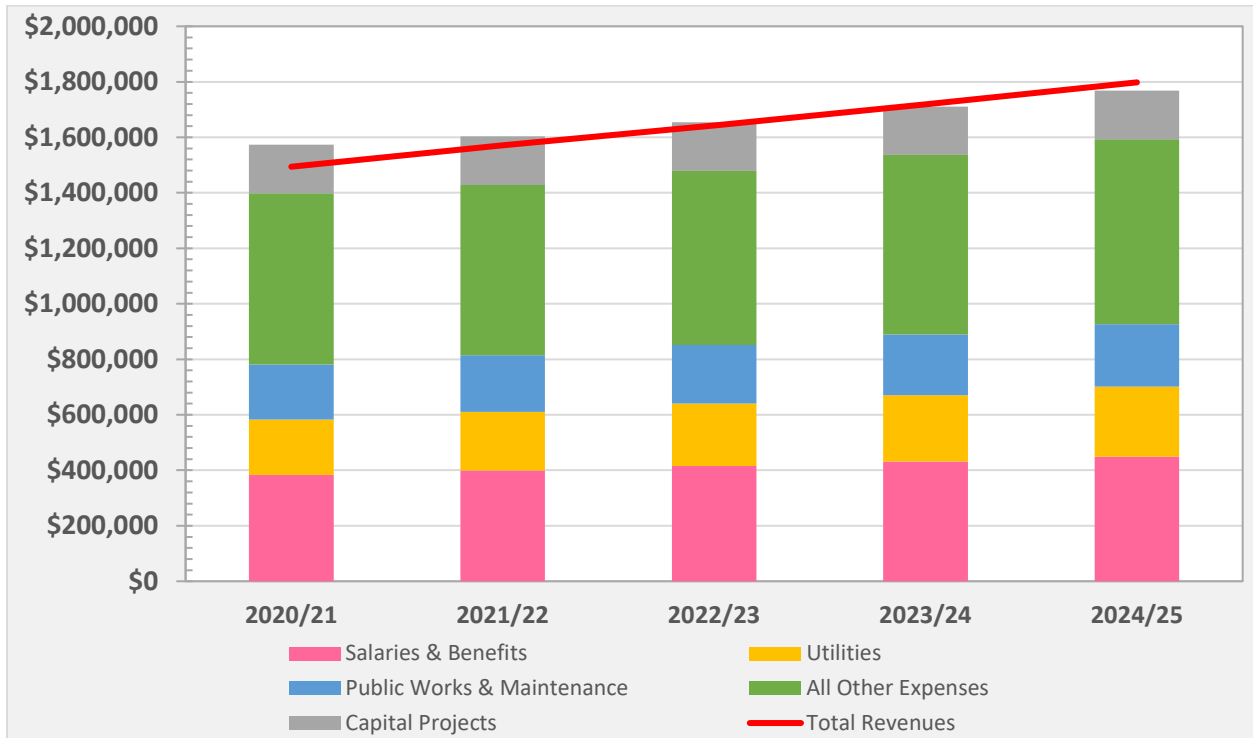
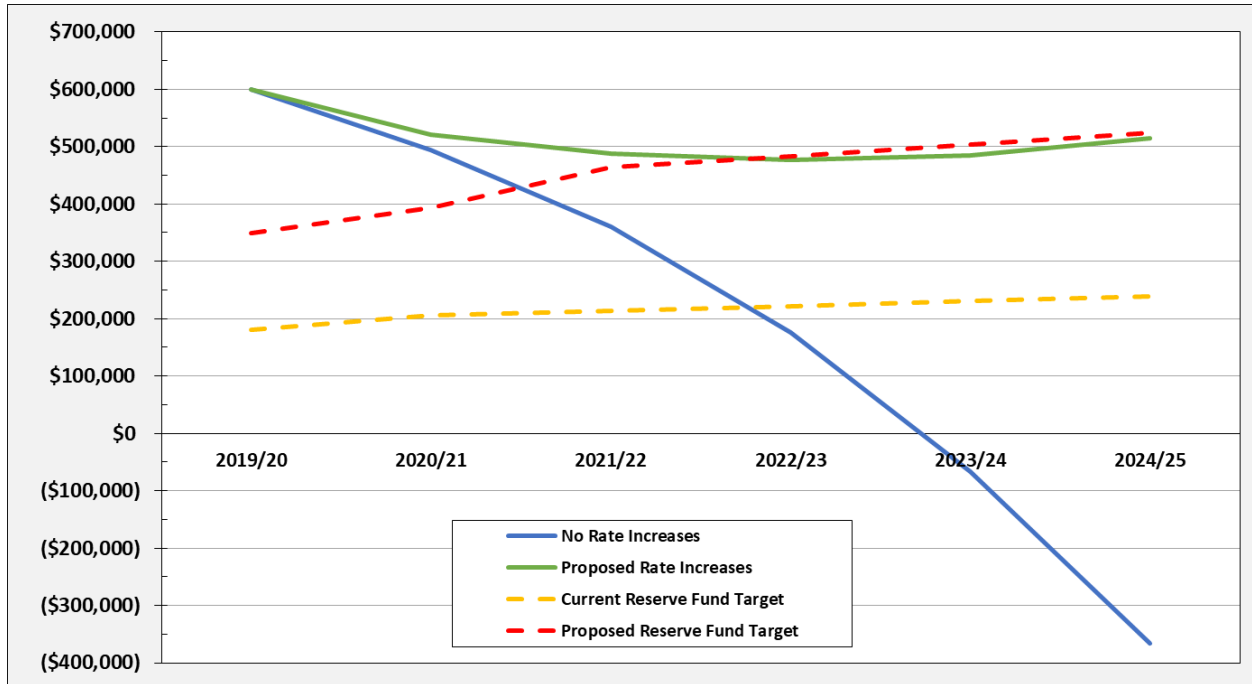


Figure 6: below shows the projected ending fund balances with and without rate increases. With the recommended rate increases, the Water Fund will meet the proposed reserve target of 25% of operating expenses plus \$50,000 for capital for the next 5 years.

Figure 6: Projected Ending Reserve Fund Balance



SECTION 4: COST ALLOCATION

The revenue requirements detailed in the previous section determine the amount of revenue to be recovered from water rates. The cost of service allocation determines how revenues will be recovered from customers based on how they use the water system. Proposition 218 requires that agencies providing “property-related services” (including water utility service) set rates and charges that are based on the cost of providing those services.

4.1 Methodology

The purpose of the cost allocation is to classify costs and to determine the amount of revenue that will be recovered from fixed charges and from the consumption charges. Using the *Base-Extra Capacity* method as recommended by the American Water Works Association (AWWA), costs are allocated to the following categories: (a) base, (b) extra, (c) metering and services, and (d) customer service.

The *base* category is intended to encompass expenses related to providing water under average, “base” demand conditions. The *extra* category includes costs related to providing water above the system average demand (ie. related to peak, “extra” usage). The *metering and services* category includes costs related to maintaining and replacing water meters. The *customer service* category contains costs associated with serving customers, such as billing and answering customer inquiries.

The *base* and *extra* categories are intended to recover variable (consumption) costs, while the *customer service* and *metering and services* categories are intended to recover fixed expenses that are incurred regardless of water used.

4.2 Cost Allocation

Table 13 provides the proposed cost allocation to each cost category using the 2020/21 Budget and Short-Term Improvements capital plan. Expenses are assigned to a category based on estimates of water usage, staff effort, and the number of meters. Customer service charges are directly assigned.

Based on the allocations, water expenses are assigned as follows: a) *base* category = 41.3%, b) *extra* category = 14.4% extra costs, c) *metering and services* category = 19.7%, and d) *customer service* category = 24.6%.

Table 13: Water Cost Allocation
City of Anderson
Water Rate Study 2020

Category	FY2020/21 Budget	CONSUMPTION CHARGE		FIXED METER CHARGE		Total	Notes
		Base	Extra	Meters & Services	Customer Service		
<i>Operating & Maintenance Expenses</i>							
Salaries & Benefits	\$383,000	40%	25%	35%	0%	100%	Meters
Customer Service Charges	\$380,000	0%	0%	0%	100%	100%	Direct
Admin Fee	\$71,000	40%	25%	35%	0%	100%	Meters
Special Departmental Expense	\$50,000	50%	10%	40%	0%	100%	Staffing
Utilities	\$200,000	80%	20%	0%	0%	100%	Usage
Professional & Special Services	\$40,000	50%	10%	40%	0%	100%	Staffing
Public Works Labor Charges	\$99,000	80%	20%	0%	0%	100%	Usage
Vehicle Maintenance	\$48,000	50%	10%	40%	0%	100%	Staffing
Water Projects (Reservoir Maintenance)	\$50,000	80%	20%	0%	0%	100%	Usage
Other Expenses	\$49,000	50%	10%	40%	0%	100%	Staffing
Total Operating Expenses	\$1,370,000	554,300	202,000	233,700	380,000		
<i>Non-Operating Expenses</i>							
Short Term Improvements (FY2019-2024)	\$175,200	50%	10%	40%	0%	100%	Staffing
CalPERS Side Fund	\$26,600	25%	25%	25%	25%	100%	Even
Total Non-Operating Expenses	\$201,800	94,300	24,200	76,700	6,700		
TOTAL EXPENSES	\$1,571,800	648,600	226,200	310,400	386,700		
PROPOSED COST ALLOCATION %		41.3%	14.4%	19.7%	24.6%	100.0%	

SECTION 5: RATE DESIGN

Based on the cost allocation detailed in Section 4, this section describes rate design considerations for assigning total cost responsibility to each customer class. The *metering and services* and *customer service* categories will be recovered from fixed charges, while the *base* and *extra* categories will be recovered from consumption charges.

5.1 Billing Units

Table 14 shows an estimate of meter counts and water use. Growth is projected at 0.50% each year. The City is not anticipating any significant development over the next 5 years. Any new connections are assumed to be single family customers with either a 5/8" or 3/4" meter.

Water consumption is based on 2019 calendar year data and is conservatively estimated to remain level through the study period to account for conservation.

**Table 14: Water Billing Unit Projection
City of Anderson
Water Rate Study 2020**

	2021/22	2022/23	2023/24	2024/25	2025/26
Growth % (1)		0.50%	0.50%	0.50%	0.50%
Total Water Meters	3,518	3,536	3,553	3,571	3,589
Total Meter Equivalents	4,574	4,597	4,620	4,643	4,666
Consumption Increase %		0.00%	0.00%	0.00%	0.00%
Billed Water Use					
Inside City	52,321,482	52,321,482	52,321,482	52,321,482	52,321,482
Outside City	7,884,622	7,884,622	7,884,622	7,884,622	7,884,622
Total	60,206,104	60,206,104	60,206,104	60,206,104	60,206,104

1 - Assumed to be a single family customer with a 5/8" or 3/4" meter

5.1.1 Meter Equivalents

The most common method to levy fixed charges is by meter size. The base meter size for the City is the 5/8" or 3/4" meter, representing over 90% of all meters served. The American Water Works Association (AWWA) guidelines recommend using meter equivalents to assign demand-related costs to larger meter sizes. The ratio at which the meter charge increases is typically a function of either meter investment (estimated cost) or the meter's safe operating capacity. Larger meters have the ability to place a greater demand on the water system and are therefore, charged based on that potential demand.

For example, based on the AWWA meter capacity ratios, a customer that has a 2" meter has 5.33 times the capacity equivalency of a customer with a 5/8" or 3/4" meter. (A 2" meter has a safe operating capacity of 160 gallons per minute (gpm) compared to a 5/8" or 3/4" meter which has a safe operating capacity of 30 gpm).

Table 15 shows the total number of meter equivalents by meter size. The re-alignment will amend the fixed charges so that each meter size will be charged based on their proportional impact on the system.

Table 15: Meter Capacity Ratios and Total Meter Equivalents
City of Anderson
Water Rate Study 2020

Meter Size	Number of Meters	AWWA RECOMMENDED METER RATIOS		Total Meter Equivalents
		Meter Capacity Ratio	Operating Capacity (gpm) (1)	
5/8" and 3/4"	3,156	1.00	30	3,156
1"	213	1.67	50	355
1-1/2"	44	3.33	100	147
2"	67	5.33	160	357
3"	18	10.67	320	192
4"	18	16.67	500	300
6"	2	33.33	1000	67
8"	0	53.33	1600	0
Total	3,518			4,574

1 - Safe Max Operating Capacity for C712-10 Singlejet Type (gpm)

5.2 Unit Cost Calculation

Table 16 calculates the unit cost for each cost category. The cost allocation percentages calculated in the prior section (Table 13) are applied to the 2021/22 revenue requirement of \$1,381,000 (line 18) from the cash projection on Table 12 .

For the consumption charge, the current rate structure includes a uniform tier which is appropriate because the City relies solely on groundwater for its water supply. Therefore, the *base* and *extra* categories have been combined and divided by water use to derive a single unit cost per cubic feet.

For the fixed meter charge, *meter and services* costs are divided by the total number of meter equivalents. *Customer service* costs are divided amongst the total number of meters. These two categories are then combined into a fixed meter charge.

In total, 55.7% of total costs are variable costs (*base and extra*) and 44.4% are fixed costs (*meters and services* and *customer service*) which is in line with the current fixed and variable revenue recovery percentages as shown on Table 7.

**Table 16: 2021/22 Unit Cost Derivation
City of Anderson
Water Rate Study 2020**

	Total	Base & Extra	Meters & Services	Customer Service
2020/21 Revenue Requirement (1)	\$1,381,000	\$768,608	\$272,721	\$339,759
Cost Allocation (2)	100.0%	55.7%	19.7%	24.6%
Units of Service (3)		60,206,104 Water Use	4,574 Meter Equivalents	3,518 # of Meters
Unit Cost		\$0.01277 \$/cf	\$4.97 \$/meter equivalent/mo	\$8.05 \$/meter/mo

1 - Table 10, Line 18

2 - Table 11

3 - Table 12

5.3 Proposed Fixed Meter Charges

Fixed meter charges recover the expenses related to *meters and services* and *customer service* categories. Table 17 calculates monthly fixed charges by meter size based on the unit costs shown in Table 16 and the meter equivalent ratios shown in Table 15. The base *meters and services* charge of \$4.97 is multiplied by the corresponding meter equivalent ratio to calculate a charge for each meter size. The *customer service* charge of \$8.05 is added to the meter equivalent charge to derive a total fixed meter charge. The proposed total fixed monthly fee for a 5/8" or 3/4" meter is \$13.02.

Table 17: Fixed Meter Charges Calculation for 2021/22
City of Anderson
Water Rate Study 2020

Meter Size	Meter Equivalent Ratio		Meter Equivalent Cost		Customer Service Charge		Total Monthly Fixed Meter Charge
5/8" and 3/4"	1.00	x	\$4.97	+	\$8.05	=	\$13.02
1"	1.67	x	\$8.28	+	\$8.05	=	\$16.33
1-1/2"	3.33	x	\$16.57	+	\$8.05	=	\$24.62
2"	5.33	x	\$26.51	+	\$8.05	=	\$34.56
3"	10.67	x	\$53.01	+	\$8.05	=	\$61.06
4"	16.67	x	\$82.83	+	\$8.05	=	\$90.88
6"	33.33	x	\$165.67	+	\$8.05	=	\$173.72
8"	53.33	x	\$265.07	+	\$8.05	=	\$273.12

5.4 Proposed Consumption Charges

Consumption charges recover the expenses related to the *base* and *extra* categories. As shown on Table 16, the consumption charge is derived by dividing *base* and *extra* expenses categories by water consumption to derive a single unit cost per cubic feet. The proposed consumption charge for use above 1,000 cf is \$0.01277.

5.4.1 Outside City Consumption Charges

The City provides water service to the approximately 233 accounts in the Wooded Acres community and has historically levied a higher consumption charge to recover the additional costs needed to serve customers outside the City's boundaries. The Outside City consumption charge is currently 3% higher than the Inside City charge.

Table 18 shows a three-year history of electricity and labor costs for Wooded Acres. On average, these costs represent 3% of total water expenses.

Table 18: Additional Costs for Outside City Service
City of Anderson
Water Rate Study 2020

Year	Electrical	Labor (1)	Total
2015/16	\$20,445	\$25,000	\$45,445
2016/17	\$17,447	\$25,000	\$42,447
2017/18	\$22,175	\$25,000	\$47,175
Average	\$20,022	\$25,000	\$45,022

(1) Based on daily COA operator maintenance, training, operations of Wooded Acres System.

Average Outside City Costs	\$45,022
2020/21 Expenses	\$1,571,800
% of Total Expenses	3.0%

5.5 Five-Year Schedule of Proposed Rates

The five-year rate plan is shown in Table 19. As described, the proposed rates for 2021/22 are derived according to the base-extra capacity method. The projected rates for subsequent years are calculated in the same manner based on the rate revenue requirements shown in the cash flow projections for each year (Table 12, Line 10) as shown in the appendix. The number of meters and meter equivalents is projected to increase by 0.5% each year, while billed water use is projected to remain the same.

**Table 19: Proposed Monthly Water Rates
City of Anderson
Water Rate Study 2020**

Meter Size	Current	PROPOSED				
		2020/21	2021/22	2022/23	2023/24	2024/25
FIXED METER CHARGE						
5/8" and 3/4"	\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
1"	\$15.24	\$16.33	\$17.02	\$17.84	\$18.63	\$19.46
1-1/2"	\$24.20	\$24.62	\$25.67	\$26.89	\$28.08	\$29.32
2"	\$36.18	\$34.56	\$36.05	\$37.75	\$39.42	\$41.16
3"	\$48.16	\$61.06	\$63.73	\$66.71	\$69.66	\$72.74
4"	\$102.12	\$90.88	\$94.87	\$99.29	\$103.68	\$108.26
6"	\$147.51	\$173.72	\$181.37	\$189.79	\$198.18	\$206.92
8"	\$221.89	\$273.12	\$285.17	\$298.39	\$311.58	\$325.32
CONSUMPTION CHARGE - OVER 1,000 CF						
City Charge for Usage Over 1,000 CF	\$0.01192	\$0.01277	\$0.01340	\$0.01408	\$0.01478	\$0.01552
Outside City Charge for Usage Over 1,000 CF	\$0.01227	\$0.01315	\$0.01381	\$0.01450	\$0.01523	\$0.01599

CF = cubic feet. 1 CF = 7.48 gallons

5.6 Bill Impacts

Due to the updated cost of service allocation, the bill impacts to customers for the first year will vary based on customer class, meter size, and actual consumption. Moreover, water consumption, particularly for single family customers, typically varies due to seasonal variations in weather and/or other factors. Hence, a single customer could face a range of impacts throughout the year.

Table 20 shows the impacts of proposed rate increases for single family customers with different levels of monthly consumption. The average single family residential customer using 1,500 cf per month will see a \$1.15 monthly bill increase in 2020/21.

Table 20: Single Family Residential Bill Impacts
City of Anderson
Water Rate Study 2020

	Monthly Use (cf)	Current Bill	Proposed				
			2020/21	2021/22	2022/23	2023/24	2024/25
Single Family Residential: 5/8" or 3/4" meter, Low Use							
Fixed Meter Charge	900	\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
<u>Consumption Charge</u>		<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>	<u>\$0.00</u>
Total Monthly Water Bill		\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
<i>\$ Change</i>				\$0.72	\$0.54	\$0.66	\$0.63
Single Family Residential: 5/8" or 3/4" meter, Avg Use							
Fixed Meter Charge	1,500	\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
<u>Consumption Charge</u>		<u>\$5.96</u>	<u>\$6.39</u>	<u>\$6.70</u>	<u>\$7.04</u>	<u>\$7.39</u>	<u>\$7.76</u>
Total Monthly Water Bill		\$18.26	\$19.41	\$20.26	\$21.26	\$22.24	\$23.27
<i>\$ Change</i>				\$1.15	\$0.86	\$1.00	\$0.98
Single Family Residential: 5/8" or 3/4" meter, High Use							
Fixed Meter Charge	3,400	\$12.30	\$13.02	\$13.56	\$14.22	\$14.85	\$15.51
<u>Consumption Charge</u>		<u>\$28.61</u>	<u>\$30.65</u>	<u>\$32.17</u>	<u>\$33.79</u>	<u>\$35.48</u>	<u>\$37.25</u>
Total Monthly Water Bill		\$40.91	\$43.67	\$45.73	\$48.01	\$50.33	\$52.76
<i>\$ Change</i>				\$2.76	\$2.06	\$2.28	\$2.32

SECTION 6: APPENDIX

Table 21: Ten-Year Cash Flow Projection - No Increases
City of Anderson
Water Rate Study 2020

	Years 1 - 5: Proposition 218					Years 6 -10: Extended Projection				
	Budget 2020/21	Projected				Projected				
	2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30	
1 Assumptions:										
2 Overall Rate Adjustment	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
3 Rate Increase Effective	Feb 1, 2021	Jan 1, 2022	Jan 1, 2023	Jan 1, 2024	Jan 1, 2025	Jan 1, 2026	Jan 1, 2027	Jan 1, 2028	Jan 1, 2029	Jan 1, 2030
4										
5 BEGINNING FUND BALANCE	\$600,000	\$493,631	\$360,423	\$176,223	(\$65,977)	(\$366,177)	(\$1,036,857)	(\$1,767,537)	(\$2,561,217)	(\$3,420,897)
6										
7 REVENUES										
8 Water Sales (1)	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000	1,322,000	
9 Rents	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	
10 Late/Turn On Fees	45,000	46,000	47,000	48,000	49,000	50,000	52,000	54,000	56,000	58,000
11 Interest	3,650	5,000	4,000	2,000	0	0	0	0	0	
12 Other Revenue	7,300	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	
13 Water Capital Fees	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	
14 Total Revenues	<u>1,466,950</u>	<u>1,470,000</u>	<u>1,470,000</u>	<u>1,469,000</u>	<u>1,468,000</u>	<u>1,469,000</u>	<u>1,471,000</u>	<u>1,473,000</u>	<u>1,475,000</u>	<u>1,477,000</u>
15										
16 EXPENSES										
17 <u>Operating & Maintenance</u>										
18 Salaries & Benefits	383,270	399,000	415,000	432,000	449,000	467,000	486,000	505,000	525,000	546,000
19 Customer Service Charges	380,416	392,000	404,000	416,000	428,000	441,000	454,000	468,000	482,000	496,000
20 Admin Fee	70,836	73,000	75,000	77,000	79,000	81,000	83,000	85,000	88,000	91,000
21 Special Departmental Expense	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000	68,000
22 Utilities	200,000	212,000	225,000	239,000	253,000	268,000	284,000	301,000	319,000	338,000
23 Professional & Special Services	40,000	41,000	42,000	43,000	44,000	45,000	46,000	47,000	48,000	49,000
24 Public Works Labor Charges	99,286	102,000	105,000	108,000	111,000	114,000	117,000	121,000	125,000	129,000
25 Vehicle Maintenance	48,273	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000
26 Water Projects (Reservoir Maintenance)	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000	68,000
27 Other Expenses	49,437	51,000	53,000	55,000	57,000	59,000	61,000	63,000	65,000	67,000
28 Subtotal O&M	<u>1,371,518</u>	<u>1,424,000</u>	<u>1,479,000</u>	<u>1,536,000</u>	<u>1,593,000</u>	<u>1,653,000</u>	<u>1,715,000</u>	<u>1,780,000</u>	<u>1,848,000</u>	<u>1,918,000</u>
29										
30 Capital Improvement Program (CIP)										
31 Short-Term Improvements (FY2021-2025)	175,200	175,200	175,200	175,200	175,200	0	0	0	0	0
32 Long-Term Improvements (FY2026-2035)	0	0	0	0	0	486,680	486,680	486,680	486,680	486,680
33 Subtotal CIP	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>
34										
35 Debt Service										
36 CalPERS Side Fund	26,601	4,008	0	0	0	0	0	0	0	0
37 Subtotal Debt Service	<u>26,601</u>	<u>4,008</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
38										
39 Total Expenses	<u>1,573,319</u>	<u>1,603,208</u>	<u>1,654,200</u>	<u>1,711,200</u>	<u>1,768,200</u>	<u>2,139,680</u>	<u>2,201,680</u>	<u>2,266,680</u>	<u>2,334,680</u>	<u>2,404,680</u>
40										
41 Net Revenues	(106,369)	(133,208)	(184,200)	(242,200)	(300,200)	(670,680)	(730,680)	(793,680)	(859,680)	(927,680)
42										
43 ENDING FUND BALANCE	493,631	360,423	176,223	(65,977)	(366,177)	(1,036,857)	(1,767,537)	(2,561,217)	(3,420,897)	(4,348,577)
44										
45										
46 Current Reserve Target (15% of O&M)	205,728	213,600	221,850	230,400	238,950	247,950	257,250	267,000	277,200	287,700
47 Current Target Met	yes	yes	no	no	no	no	no	no	no	no
48										
49 Proposed Reserve Target (25% of O&M + \$50,000)	392,880	406,000	419,750	434,000	448,250	463,250	478,750	495,000	512,000	529,500
50 Proposed Target Met	yes	no	no	no	no	no	no	no	no	no
51										

Table 22: Ten-Year Cash Flow Projection - Proposed Rate Increases
City of Anderson
Water Rate Study 2020

	Years 1 - 5: Proposition 218					Years 6 -10: Extended Projection				
	Budget 2020/21	Projected				Projected				
		2021/22	2022/23	2023/24	2024/25	2025/26	2026/27	2027/28	2028/29	2029/30
1 Assumptions:										
2 Overall Rate Adjustment	5.0%	5.0%	5.0%	5.0%	5.0%	9.0%	9.0%	9.0%	9.0%	9.0%
3 Rate Increase Effective	Feb 1, 2021	Jan 1, 2022	Jan 1, 2023	Jan 1, 2024	Jan 1, 2025	Jan 1, 2026	Jan 1, 2027	Jan 1, 2028	Jan 1, 2029	Jan 1, 2030
4										
5 BEGINNING FUND BALANCE	\$600,000	\$520,631	\$488,423	\$477,223	\$485,023	\$514,823	\$290,143	\$162,463	\$143,783	\$247,103
6										
7 Revenues with July 1 Effective Date	1,381,000	1,450,000	1,523,000	1,599,000	1,679,000	1,830,000	1,995,000	2,175,000	2,371,000	2,584,000
8										
9 REVENUES										
10 Water Sales (1)	1,349,000	1,423,000	1,494,000	1,569,000	1,647,000	1,763,000	1,922,000	2,095,000	2,284,000	2,490,000
11 Rents	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000	9,000
12 Late/Turn On Fees	45,000	46,000	47,000	48,000	49,000	50,000	52,000	54,000	56,000	58,000
13 Interest	3,650	5,000	5,000	5,000	5,000	5,000	3,000	2,000	1,000	2,000
14 Other Revenue	7,300	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000	8,000
15 Water Capital Fees	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000	80,000
16 Total Revenues	<u>1,493,950</u>	<u>1,571,000</u>	<u>1,643,000</u>	<u>1,719,000</u>	<u>1,798,000</u>	<u>1,915,000</u>	<u>2,074,000</u>	<u>2,248,000</u>	<u>2,438,000</u>	<u>2,647,000</u>
17										
18 EXPENSES										
19 <u>Operating & Maintenance</u>										
20 Salaries & Benefits	383,270	399,000	415,000	432,000	449,000	467,000	486,000	505,000	525,000	546,000
21 Customer Service Charges	380,416	392,000	404,000	416,000	428,000	441,000	454,000	468,000	482,000	496,000
22 Admin Fee	70,836	73,000	75,000	77,000	79,000	81,000	83,000	85,000	88,000	91,000
23 Special Departmental Expense	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000	68,000
24 Utilities	200,000	212,000	225,000	239,000	253,000	268,000	284,000	301,000	319,000	338,000
25 Professional & Special Services	40,000	41,000	42,000	43,000	44,000	45,000	46,000	47,000	48,000	49,000
26 Public Works Labor Charges	99,286	102,000	105,000	108,000	111,000	114,000	117,000	121,000	125,000	129,000
27 Vehicle Maintenance	48,273	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000
28 Water Projects (Reservoir Maintenance)	50,000	52,000	54,000	56,000	58,000	60,000	62,000	64,000	66,000	68,000
29 Other Expenses	49,437	51,000	53,000	55,000	57,000	59,000	61,000	63,000	65,000	67,000
30 Subtotal O&M	<u>1,371,518</u>	<u>1,424,000</u>	<u>1,479,000</u>	<u>1,536,000</u>	<u>1,593,000</u>	<u>1,653,000</u>	<u>1,715,000</u>	<u>1,780,000</u>	<u>1,848,000</u>	<u>1,918,000</u>
31										
32 Capital Improvement Program (CIP)										
33 Short-Term Improvements (FY2021-2025)	175,200	175,200	175,200	175,200	175,200	0	0	0	0	0
34 Long-Term Improvements (FY2026-2035)	0	0	0	0	0	486,680	486,680	486,680	486,680	486,680
35 Subtotal CIP	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>175,200</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>	<u>486,680</u>
36										
37 Debt Service										
38 CalPERS Side Fund	26,601	4,008	0	0	0	0	0	0	0	0
39 Subtotal Debt Service	<u>26,601</u>	<u>4,008</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
40										
41 Total Expenses	<u>1,573,319</u>	<u>1,603,208</u>	<u>1,654,200</u>	<u>1,711,200</u>	<u>1,768,200</u>	<u>2,139,680</u>	<u>2,201,680</u>	<u>2,266,680</u>	<u>2,334,680</u>	<u>2,404,680</u>
42										
43 Net Revenues	(79,369)	(32,208)	(11,200)	7,800	29,800	(224,680)	(127,680)	(18,680)	103,320	242,320
44										
45 ENDING FUND BALANCE	520,631	488,423	477,223	485,023	514,823	290,143	162,463	143,783	247,103	489,423
46										
47										
48 Current Reserve Target (15% of O&M)	205,728	213,600	221,850	230,400	238,950	247,950	257,250	267,000	277,200	287,700
49 <i>Current Target Met</i>	yes	yes	yes	yes	yes	yes	no	no	no	yes
50										
51 Proposed Reserve Target (25% of O&M + \$50,000)	392,880	406,000	419,750	434,000	448,250	463,250	478,750	495,000	512,000	529,500
52 <i>Proposed Target Met</i>	yes	yes	yes	yes	yes	no	no	no	no	no
53										

Table 23: Rate Derivation for Years 2 through 5 (2022/23 through 2024/25)

**City of Anderson
Water Rate Study 2020**

Year	Total Revenue Requirement (1)	CONSUMPTION CHARGE		FIXED METER CHARGE				
		Base/Extra		Meters		Customer Service		Total Fixed Meter Charge
Allocation %	100.0%	55.7%		19.7%		24.6%		
2021/22	\$1,450,000	Revenue Requirement	\$807,011	Revenue Requirement	\$286,347	Revenue Requirement	\$356,734	\$13.56
		Water Use	60,206,104	No. of Meter Equivalents	4,597	Total Water Meters	3,553	
		Unit Cost (\$/cf)	\$0.01340	\$/meter equiv/mo.	\$5.19	\$/meter/mo.	\$8.37	
2022/23	\$1,523,000	Revenue Requirement	\$847,640	Revenue Requirement	\$300,763	Revenue Requirement	\$374,694	\$14.22
		Water Use	60,206,104	No. of Meter Equivalents	4,620	Total Water Meters	3,553	
		Unit Cost (\$/cf)	\$0.01408	\$/meter equiv/mo.	\$5.43	\$/meter/mo.	\$8.79	
2023/24	\$1,599,000	Revenue Requirement	\$889,938	Revenue Requirement	\$315,771	Revenue Requirement	\$393,392	\$14.85
		Water Use	60,206,104	No. of Meter Equivalents	4,643	Total Water Meters	3,571	
		Unit Cost (\$/cf)	\$0.01478	\$/meter equiv/mo.	\$5.67	\$/meter/mo.	\$9.18	
2024/25	\$1,679,000	Water Use	\$934,463	Revenue Requirement	\$331,570	Revenue Requirement	\$413,074	\$15.51
			60,206,104	No. of Meter Equivalents	4,666	Total Water Meters	3,589	
		Unit Cost (\$/cf)	\$0.01552	\$/meter equiv/mo.	\$5.92	\$/meter/mo.	\$9.59	

1 - From Table 12: Water Cash Flow Projection with Rate Increases