Blue Lake City Water and Wastewater Rate Study

Rural Community Assistance Corporation

RCAC
www.rcac.org

Funder Acknowledgement

The analysis and preparation of this rate study was completed at no cost to the City of Blue Lake under funding provided by several agencies.

Drinking Water Analysis

This material is based upon work supported under a grant by the Rural Utilities Service, United States Department of Agriculture, and produced as part of the RCAP Technitrain Project. Any opinions, findings, and conclusions or recommendations expressed in this material are solely the responsibility of the authors and do not necessarily represent the official views of the Rural Utilities Service.

Wastewater Analysis

This material is based upon work supported under a grant by the Environmental Protection Agency as part of technical assistance grants awarded to Rural Community Assistance Partnership.

Reporting and Policy Review

This material was funded under a grant from the U.S. Department of Health and Human Services.

Table of Contents

Introduction

Introduction

Founded in 1978, RCAC provides training, technical and financial resources and advocacy so rural communities can achieve their goals. Since 1978, our dedicated staff and active board, coupled with our key values: leadership, collaboration, commitment, quality and integrity, have helped effect positive change in rural communities across the West.

RCAC's work includes environmental infrastructure (water, wastewater and solid waste facilities); affordable housing development; economic and leadership development; and community development finance. These services are available to communities with populations of fewer than 50,000, other nonprofit groups, Tribal organizations, farmworkers, colonias and other specific populations. Headquartered in West Sacramento, California, RCAC's employees serve rural communities in 13 western states and the Pacific islands.

This rate analysis and recommendations was requested in response to increasing infrastructure needs, and noticeably insufficient revenue. The city has been borrowing money from it capital reserves for operations, and recognizes the need for ongoing fiscal sustainability

It is the responsibility of the City Council to manage the system in a financially sustainable manner. The findings and recommendations in this report are designed to support the council in making informed decisions on the proper financial management of the system. The council's responsibility is to provide safe drinking water, and wastewater collection and treatment to their customers and ensure the system complies with all federal and state regulations.

The following principles guide this rate study

- Compliance with State Regulations – specifically Proposition 218 when setting water rates.
- System Sustainability – The water systems long term viability to provide water and wastewater treatment both in the short and long term.
- Justifiability -Rates should be justified by the actual costs of running and operating the water and wastewater systems.

Disclaimer – The findings, recommendations, and conclusions contained in this financial analysis are based on financial information provided to RCAC by the City of Blue Lake. Although reasonable care was made to assure the reliability of this information, no warranty is expressed or implied as to the correctness, accuracy or completeness of the information contained herein. Any action taken based on such findings, recommendations, or conclusions is undertaken at the discretion of the City of Blue Lake. In no event will RCAC or its partners, employees, or agents, be liable for any decision made or action taken in reliance on the information contained in this analysis.

System Basic Statistics

Community

Blue Lake City is located along the Mad River approximately 16 miles northeast of Eureka in Humboldt County. The population in 2020 was approximately 1,200 which is fairly consistent from the population in 2010. The town was incorporated in 1910 as a lumber town and shipping center. The city is managed by a City Council with regular monthly meetings the 3rd Tuesday of each month.

Median Household income according to the 2020 census is $49,479 which qualifies Blue Lake as a disadvantaged community.

Drinking Water System

System Description

The water system within the City of Blue Lake is part of the Humboldt Bay Municipal Water District (HBMWD). All water is purchased directly from the HBMWD and distributed through the city's infrastructure to the customers. The system serves 629 residential metered customers, 15 metered agricultural customers, and 41 metered commercial customers, including the Casino.

Current Water Rate Structure

The system currently uses an in town rate and an out of town rate with a base rate and an increasing tiered usage rate. As discussed above, an increased tiered usage block is discouraged.

Meter Size	Inside the City	Inside the City TRF	Current Combined Rate
5/8"	$27.48	$1.00	$28.48
3/4"	$27.48	$1.11	$28.59
1"	$45.48	$1.33	$46.81
1-1/2"	$91.48	$1.44	$92.92
2"	$146.41	$1.67	$148.08
3"	$320.57	$3.89	$324.46
4"	$576.86	$5.56	$582.42
6"	$1,282.02	$11.11	$1,293.13

Table 1: Current Inside the City Base Charges for Drinking Water

Meter Size	Outside the City	Outside the City TRF	Current Combined Rate
5/8"	$41.22	$1.50	$42.72
3/4"	$41.22	$1.67	$42.89
1"	$68.82	$2.00	$70.82
1-1/2"	$137.22	$2.17	$139.39
2"	$219.63	$2.51	$222.14
3"	$480.86	$5.84	$486.70
4"	$865.30	$8.33	$873.63
6"	$1,923.03	$16.67	$1,939.70

Table 2: Current Outside of City Base Charges for Drinking Water

Tier in CF	Inside of City	Outside of City
0-200	$1.87	$2.81
201-400	$1.97	$2.98
401-1,200	$2.10	$3.15
1,201+	$2.05	$3.05

Table 3:Current Drinking Water Usage Charges

Future population and usage projections

For the purposes of rate calculations, RCAC projected population growth and water conservation. Community has remained

Growth of Consumption over Base year	Year 1	Year 2	Year 3	Year 4	Year 5
Conservation Factor	-2.0%	-3.0%	-4.5%	-4.5%	-4.5%
Community Growth Factor	0.0%	0.0%	0.0%	0.0%	0.0%
Total Consumption Adjustment	-2.0%	-3.0%	-4.5%	-4.5%	-4.5%

Table 4: Growth and Conservation Assumptions

Wastewater System

Wastewater System Description

The wastewater treatment system serves the City of Blue Lake, the nearby tribal casino, and some out of town customers. The system treats and discharges waste from these locations and does not require pre-treatment. The system serves approximately 1,200 customers including residential and industrial users. The 23 industrial users include the Rancheria Hotel and Casino, as well as a brewery.

Wastewater use statistics

For this study residential use was confirmed to meet industry standard. The average household uses .171 BOD per person, per day. In blue lake this equates to .407 BOD per household for day. The total BOD for industrial users is 90.75 pounds per day. The largest two users are the Blue Lake Reservation and the Blue Lake Brewery.

Current wastewater rate structure

Current wastewater rates consist of several components. Residential customers are charged a flat rate, plus one Capital Reserve Fund account. The capital reserve fund is $10.82 with a base rate of $36.42. This totals $47.24 per residential unit.

Industrial flow customers pay the same base rate of $36.42 plus anywhere from a single capital fund charge to 150 based on their outflow, and BOD of the unit. There is also a per flow calculation using a BOD rating.

Inflow and Infiltration

The city has reported significant winter infiltration/inflow as a contribution to excessive wear and tear. The winter I&I is approximately 6 times that of the summer months. I&I is a significant factor in overtaxing the system.

Current Financial condition and analysis

Drinking Water

Current rate schedule

The city currently has three components to their drinking water rates. A base rate and turbidity reduction fee, and an increasing tiered usage charge. Out of city customers are charged more for water in all three areas. The below tables indicate the current rate structure.

	Inside City		Outside City	
Meter Size	Base Rate	TRF Charge	Base Rate	TRF Charge
5/8"	$27.48	$1.00	$41.22	$1.50
3/4"	$27.48	$1.11	$41.22	$1.67
1"	$45.87	$1.33	$68.82	$2.00
1 – 1/2"	$91.48	$1.44	$137.22	$2.17
2"	$146.51	$1.67	$219.63	$2.51
3"	$320.57	$3.89	$480.86	$5.84
4"	$576.86	$5.56	$865.30	$8.33
6"	$1,282.02	$11.11	$1,923.03	$16.67

Table 5: Current Base and Turbidity Reduction Fees

Usage Tier	Inside City per 100 cf	Outside City per 100 cf
0-200	$1.87	$2.81
201-400	$1.97	$2.98
401-1,200	$2.10	$3.15
1,201+	$2.05	$3.05

Table 6: Current Usage Rate by Tier Per 100 cubic feet

Analysis of Current Rate Structure

California public entities must comply with Prop 13 and 218. Rates must be proportional to the service received. Some areas RCAC noted in this analysis which may present issues with these laws include:

- The use of in city and out of city rates. With a cost allocation plan, and methodology the costs of all water expenses should be allocated to the rates, and not subsidized through city property taxes. This makes a charge for out of city customers challenging to justify with very little additional expense.
- Tiered rates have been proven challenging to justify under proportional use. The cost of producing 201 cubic feet of water is not materially different than producing 200 cubic feet.

The current rate structure, increasing tiered block, is effective at promoting water conservation while maintaining consistent revenue. However, the increasing tiered block rate is not justifiable with the current financial data available.

Current budget

The current and historical budgets for drinking water indicate a consistently increasing expense and revenues insufficient to keep pace.

Notable issues include a loss on turbidity reduction fees of almost $5,000 a year. This is an expense the city has not been able to fully recover from users. This is resulting in a large operations short fall.

The below budget summarizes revenue and expense by broad category. This reflects the assumption of a rate increase in November of 2023 with the currently approved budget. A complete budget is available in Appendix A.

EXPENSES AND SOURCES OF FUNDS	2020	2021	2022	2023
Total Operation and Maintenance Expenses:	254,923	254,287	482,767	561,582
Total General and Administrative Expenses:	100,918	103,301	94,908	121,044
TOTAL EXPENSES	355,841	357,588	577,675	682,626
TOTAL REVENUE	541,373	493,711	0	637,048
NET LOSS OR GAIN:	185,532	136,123	-577,675	-45,578
NET CASH FLOW (Contribution to Reserves)	185,532	136,123	-577,675	25,307

Table 7: Historic and Current Budget for Drinking Water

Current dedicated reserves

The system currently has established reserves in the three major categories. None of the debt the system currently holds requires a debt reserve.

Reserve	Purpose	Balance	Reserve Target
Operations	Fund daily operations of the system between incurring expenses, and receiving revenue.	$73,411	$70,198
Emergency	Used to resolve unplanned and unexpected emergencies to the wastewater system	$11,884	$50,000
Capital Improvement	Long term reserves designated for capital improvement and replacement	$886,410	Determined by CIP

Table 8: Current Drinking Water Dedicated Reserves

Analysis of current financial condition

The current revenue will not cover operations beginning in FY23 and will continue to see a decline under the current annual adjustments.

Wastewater

Current rate schedule

Current wastewater rates consist of several components. Residential customers are charged a flat rate, plus one Capital Reserve Fund account. The capital reserve fund is $10.82 with a base rate of $36.42. This totals $47.24 per residential unit.

Industrial flow customers pay the same base rate of $36.42 plus anywhere from a single capital fund charge to 150 based on their outflow, and BOD of the unit. There is also a per flow calculation using a BOD rating.

Customer Class	Base Rate	Capital Reserve Fee	Monthly Flow Charge (average)	Average Monthly Bill
Residential	$36.42	$10.82	$0.00	$47.24
Industrial Flow	$36.42	$10.82	$0.00	$47.24
Industrial Flow 8 SCR	$36.42	$86.56	$43.45	$166.43

Industrial Flow 2 SCR	$36.42	$21.82	$3.99	$62.23
Industrial Flow 24 SCR	$36.42	$259.68	$3,638.04	$3,934.14
Industrial Flow 150 SCR	$36.42	$1,623.00	$18,385.55	$20,044.97
Industrial Flow 5 SCR	$36.42	$54.10	$0.00	$54.10
Industrial Flow 50 SCR	$36.42	$541.00	$0.00	$577.42

Table 9: Current Wastewater Rates

Current budget

The following budget table shows a high level summary of expenses and revenues over the past three years. This also includes the approved budget for FY23. The projected 2023 budget includes an assumption of new rates in November of 2022.

EXPENSES AND SOURCES OF FUNDS	**2020**	**2021**	**2022**	**2023**
OPERATIONS & MAINTENANCE EXPENSES				
Salaries, Wages & Benefits	235,011	253,098	238,798	286,559
Repairs and Maintenance	4,255	5,194	7,279	4,100
Supplies	11,232	12,698	12,066	15,604
Utilities	49,197	47,614	45,185	48,800
Total Operation and Maintenance Expenses:	299,695	318,604	303,328	355,063
GENERAL & ADMINISTRATIVE EXPENSES	2020	2021	2021	2023
Operating Reserve Funding				69,794
Emergency Reserve Funding				10,000
Contracted Professional Services	14,744	27,979	40,409	46,815
Other Contracted Services	24,222	31,632	16,140	28,465
Insurance	7,983	10,002	10,940	15,534
Other Expenses	30,410	34,486	35,664	36,167
Depreciation	132,513	105,171	102,006	
Total General and Administrative Expenses:	209,872	209,270	205,159	206,775
TOTAL EXPENSES	509,567	527,874	508,487	561,838
SOURCE OF FUNDS / REVENUES RECEIVED				
Sales Revenue (Base + Usage)	382,263	362,612	341,036	479,166
New connections				0
Interest income	1,473	1,632	260	268
Uncollectable Receivables				-1,096
State Revenue			7,745	7,977
Other Revenue	16,027	8,739	6,742	6,944
Transfers from outside (Capital Revenue)	91,014	30,338	144,861	
TOTAL REVENUE	490,777	403,321	500,644	562,325
NET LOSS OR GAIN:	-18,790	-124,553	-7,843	487
NET CASH FLOW (Contribution to Reserves)	-18,790	-124,553	-7,843	80,282

Table 10: Historic and Current Budget for Wastewater

In the FY23 budget presented in this report, the depreciation expense was replaced by a reserve contribution. This reflects a proposed change to cash basis calculations based on the City's capital improvement plan.

The city does not currently budget for doubtful accounts but for the purposes of this study they were estimated below industry standards at 1/5 of 1% or 0.2% per year. This equates to approximately $700 a year and has minimal impact on rates.

Current Financial indicators

Financial solvency for wastewater systems is determined in several ways. The current key indicating financial ratios are listed below.

- Current Ratio: The current ratio is a very quick calculation of how a system can repay its liabilities in the immediate future. Typically, within the next year.
    - Blue Lake had a ratio of current assets/current ratio of over 3 in July of 2021, but this has changed and decreased over the past year.
- Days Cash on Hand: The operating reserve for Blue Lake is currently at a negative number. Which means the system has no ability to pay bills without borrowing funds.

The wastewater system holds no external debt, so there is no debt to be considered in these ratios.

Current dedicated reserves

The system holds the current balances in reserves

Reserve	Purpose	Balance	Reserve Target
Operations	Fund daily operations of the system between incurring expenses, and receiving revenue.	-$165,000	$44,383
Emergency	Used to resolve unplanned and unexpected emergencies to the wastewater system	$0.00	$50,000
Capital Improvement	Long term reserves designated for capital improvement and replacement	$1,458, 998	Continuous Contributions

Table 11:Reserve Balances and Purpose

The above mentioned reserves indicate a negative balance in the operations account. This money was borrowed from the Capital Improvement Reserve bringing the functional balance of the capital improvement reserve to $1,293,998.

Analysis of current financial condition

Revenue is not sufficient to cover operations at this point. The continued increase in expense, and anticipated maintenance needs will continue to exacerbate the issues facing the system.

In the current wastewater calculations, the large industrial users are paying the bulk of the expenses. This is directly proportional to their usage and demand on the system.

Affordability is defined for the purpose of this study as the amount the average residential customer pays for wastewater. Based on a Median Household income of $53,929 the average residential customer pays 1.05% of their income in wastewater. Most funders consider this affordable.

Citywide Financial Policies

Financial policies currently under review include:

- Reserves policies. These policies indicate how reserve targets are established, who can access them, and for what purpose.
- Capital Improvement Funding Policy- Currently the CIP reserve policy is to collect and establish a set capital improvement fee each month. This has left the system shy of covering operations while building a large reserve with extremely limited use.
    - Clarity should be established regarding how this capital reserve can be used in extraordinary expenses, such as line breaks and replacements.

Future Financial condition and analysis

Drinking Water Future Financial Condition

Capital projects planned

The most urgent need for the water system is upgrading the old redwood tanks, which were installed in 1974. This will not be a fundable project in FY23 but grants and loans should be sought as soon as feasible. The needs of Blue Lake Drinking Water are detailed in Appendix C and the below table highlights the immediate needs.

Asset	Normal Estimated Life	Current Age	Planned Remaining Life	Estimated Remaining Life	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Cash Required
400000 gal redwood tank	40	48	-8	1	301,222	5%	95%	0%	$15,061
Ford Ranger Unit 172	20	15	5	1	8,413	100%	0%	0%	$8,413
1991 Ford F600 dump truck	10	31	-21	2	6,655	100%	0%	0%	$6,655
1994 John Deere Loader	10	28	-18	2	9,316	100%	0%	0%	$9,316
500000 gal redwood tank	30	36	-6	3	735,203	5%	95%	0%	$36,760
1993 Ford Ranger Pickup	10	29	-19	3	3,575	100%	0%	0%	$3,575
3/4" services and boxes	50	48	2	5	22,077,950	2%	50%	48%	$441,559

Table 12:Capital Projects for Drinking Water

Suggested reserve funding

Based on the above descriptions, the reserve balances RCAC recommends, as well as repayment periods or make up periods are indicated below. They highest priority is on establishing an emergency reserve and restoring operating reserves.

Reserve	Current Balance	Suggested Balance	Make up Period	Annual Reserve
Operating	$70,198	$70,198	NA	N/A
Emergency	$11,884	$50,000	5	$7,623

Table 13: Drinking Water Reserve Funding

Capital Reserves will be funded according to the capital improvement plan with average annual contributions over the next five years of $63,361.

For the purpose of reserve calculations, any expenses under $5,000 are not capitalized and will be paid for out of general operations.

Projected 5 year budget

If no rate adjustment is made, the following five year projected budget will apply.

	2023	2024	2025	2026	2027	5 Years
TOTAL EXPENSES	$682,626	$686,588	$717,797	$734,468	$759,866	$3,581,345
TOTAL REVENUE	$487,279	$499,388	$510,494	$525,809	$541,583	$2,564,554
NET LOSS OR GAIN: (Short/Over to Reserves)	-$195,347	-$187,200	-$207,303	-$208,659	-$218,283	-$1,016,791
NET CASH FLOW (Contribution to Reserves)	-$124,462	-$119,713	-$135,286	-$136,394	-$146,018	-$661,873

Table 14: Projected Budget if no Rate Adjustment is considered

Suggested rates

RCAC Proposes removing the out of town classification and adjusting the increasing tiered usage charge in favor of a uniform block rate charge.

When taking only the breakdown between variable and fixed cost, RCAC calculates a theoretical base rate for Blue Lake for year one would be:

Meter Size	Theoretical Base Rate
0.625	$72.95
0.750	$109.42
1.000	$182.37
1.500	$364.73
2.000	$583.57
3.000	$1,167.14
4.000	$1,823.65

Table 15:Theoretical Base Rates

Recognizing the theoretical rates are unrealistic for the average Blue Lake customer, the proposed rates recover costs, but keep rates more manageable.

Proposed base rate

Meter Size	2023	2024	2025	2026	2027
5/8”	42.28	44.40	46.62	48.95	51.39
3/4”	63.42	66.59	69.92	73.42	77.09
1”	105.70	110.99	116.54	122.37	128.48
1-1/2”	211.41	221.98	233.08	244.73	256.97
2”	338.26	355.17	372.93	391.57	411.15
3”	676.51	710.34	745.85	783.15	822.30
4”	1,057.05	1,109.90	1,165.40	1,223.67	1,284.85

Table 16: Proposed Rates for FY23-FY27

A simplified usage rate which charges the same commodity charge for each cubic foot of water (rounded up to 100) sold is suggested below.

2023	2024	2025	2026	2027
$1.90	$2.00	$2.09	$2.20	$2.31

Impact of suggested rates on 5 year budget

If the above rates are adopted, the resulting budget will be balanced with annual reserve contributions.

EXPENSES AND SOURCES OF FUNDS	2023	2024	2025	2026	2027
Total Operation and Maintenance Expenses:	561,582	577,035	602,945	630,158	658,744
Total General and Administrative Expenses:	121,044	109,554	114,851	104,310	101,123
TOTAL EXPENSES	682,626	686,588	717,797	734,468	759,866
TOTAL REVENUE	637,048	666,532	696,128	730,935	767,482
NET LOSS OR GAIN:	-45,578	-20,056	-21,668	-3,533	7,615
NET CASH FLOW (Contribution to Reserves)	25,307	47,431	50,349	68,732	79,880

Table 17: Drinking Water Budget Projections

Impact of suggested rates on Customer bills

The average customer bill by meter size will increase according to the below table.

Meter Size	Count	Current	Year 1	Year 2	Year 3	Year 4	Year 5
5/8"	615	$43.52	$56.92	$59.61	$62.34	$65.46	$68.73
3/4"	38	$56.85	$90.16	$94.38	$98.65	$103.58	$108.76
1"	17	$87.39	$143.82	$150.61	$157.49	$165.37	$173.64
1.5"	2	$263.71	$367.89	$384.61	$401.19	$421.25	$442.32
2"	7	$1,317.76	$1,402.22	$1,460.93	$1,516.03	$1,591.83	$1,671.42
3"	1	$347.67	$701.18	$735.98	$772.36	$810.98	$851.53
4"	1	$587.40	$1,066.67	$1,119.90	$1,175.73	$1,234.52	$1,296.24

Table 18: Average Customer Bill Based on Meter Size

Wastewater System Future Financial Condition

Needed capital projects

The most immediate needs for the wastewater system include expanding capacity and relining the ponds. These large expenses will be paid largely through grants and some reserves. Although the system may need to consider loans. Cash Reserves would be sufficient for cash based needs in the coming years. However, they would quickly be exhausted if additional revenue was not collected.

Asset	Normal Estimated Life	Current Age	Planned Remaining Life	Estimated Remaining Life	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Cash Required
50KW generator w/trailer (1/2)	10	23	-13	1	6,648	100%	0%	0%	$6,648
Chlorinating system	10	22	-12	1	73,096	25%	0%	75%	$18,274

Pipeline camera	10	20	-10	1	6,537	100%	0%	0%	$6,537
Pipeline camera (	10	20	-10	1	2,115	100%	0%	0%	$2,115
Sewage channel grinder	10	18	-8	1	97,376	25%	0%	75%	$24,344
Pump station	15	17	-2	1	54,305	25%	0%	75%	$13,576
R158 Ford Ranger/unit 172 (1/2)	7	15	-8	1	5,841	100%	0%	0%	$5,841
Collection pump	10	15	-5	1	9,191	100%	0%	0%	$9,191
John Deere 54" Riding Lawnmower	5	10	-5	1	13,516	100%	0%	0%	$13,516
Forklift	5	10	-5	1	6,909	100%	0%	0%	$6,909
2012 Ford F150	5	10	-5	1	22,198	25%	0%	75%	$5,549
4" Laterals	50	67	-17	2	49,582	25%	75%	0%	$12,395
3' Manholes	50	66	-16	2	46,855	25%	75%	0%	$11,714
Sewage pumping station	50	64	-14	2	49,766	25%	75%	0%	$12,442
VC Pipe	50	63	-13	2	21,806	25%	75%	0%	$5,451
VC Pipe	50	62	-12	2	273,635	15%	85%	0%	$41,045
Aerator, 5 hp, Model FSS Endura, Aqua-Jet (3 of 3)	10	11	-1	2	9,601	100%	0%	0%	$9,601
Aerator, 5 hp, Model FSS Endura, Aqua-Jet (2 of 3)	10	11	-1	2	9,601	100%	0%	0%	$9,601
1991 Ford F600 dump truck (1/3)	10	31	-21	2	6,720	100%	0%	0%	$6,720
1994 John Deere loader (1/3)	10	28	-18	2	9,407	100%	0%	0%	$9,407
Control panel/upgrade	15	14	1	2	38,301	25%	0%	75%	$9,575
Lift station	50	48	2	3	106,967	15%	85%	0%	$16,045
Aerator, 5 hp, Model FSS Endura, Aqua-Jet (1 of 3)	10	11	-1	3	9,601	100%	0%	0%	$9,601
WWTP baffle curtain	10	8	2	3	17,277	100%	0%	0%	$17,277
1993 Ford Ranger pickup (1/2)	10	29	-19	3	3,610	100%	0%	0%	$3,610
Ind Park lift station rehab	15	13	2	3	41,503	25%	0%	75%	$10,376
Generator - Industrial Park	10	8	2	3	26,251	25%	0%	75%	$6,563
Treatment plant - Rancheria Upgrades	10	7	3	4	824,399	15%	85%	0%	$123,660
Sewer treatment plant	15	12	3	4	12,872	100%	0%	0%	$12,872

Sewer treatment plant	15	17	-2	5	41,498	25%	0%	75%	$10,375
Sludge Removal	15	12	3	5	311,593	100%	0%	0%	$311,593
Radio-operated Alarm system unit (1 of 4)	5	11	-6	5	2,342	100%	0%	0%	$2,342
Radio-operated Alarm system unit (1 of 4)	5	11	-6	5	2,342	100%	0%	0%	$2,342

Table 19: Wastewater Capital Needs for 2023-2027

A complete Capital Improvement Plan for Wastewater is in Appendix D.

Suggested reserve funding

Based on the above descriptions, the reserve balances RCAC recommends, as well as repayment periods or make up periods are indicated below. They highest priority is on establishing an emergency reserve and restoring operating reserves.

Reserve	Current Balance	Suggested Balance	Make up Period	Annual Reserve
Operating	-$165,000	$44,383	3	$69,794
Emergency	$0.00	$50,000	5	$10,000

Table 20: Wastewater Reserve Funding

Capital Reserves will not be funded in years 1-3 to allow repayment of the operating reserve without increasing rates to an unsustainable level. If no rate increase is enacted, the system will be unable to pay back, or establish sufficient operating reserves and day to day functions of the system.

For the purpose of reserve calculations, any expenses under $5,000 are not capitalized and will be paid for out of general operations.

Projected 5 year budget with No Change

The below table indicates what will happen if the system makes no change to rate structure, and no adjustment to rates. For this calculation, reserve contributions remained separate.

	2023	2024	2025	2026	2027	5 Years
Expenses	$492,044	$520,157	$549,172	$582,447	$611,978	$2,755,798
Revenue	$381,406	$392,154	$403,202	$414,930	$427,377	$2,019,069
Budget Shortfall	-$110,637	-$128,004	-$145,970	-$167,517	-$184,601	-$736,729
Operation Debt Incurred	-$100,637	-$118,004	-$135,970	-$157,517	-$174,601	-$686,729

Table 21: Budget with No Rate Adjustments

The above table shows that if no rate change is enacted the system will continue to lose money on operations and eventually exhaust all reserves through debt.

Methodology of setting rates

The generally accepted methodology for conducting cost-base water and wastewater rate studies relies

on analyzing the system's revenue requirement, cost-of- service, and rate-design. Integral to this methodology are the following components:

Capital Improvement (CIP) Review

Capital expenditures are funds used by the utility to acquire or upgrade physical assets such as property, buildings or equipment. Together with loan and grant proceeds, the purpose of this review is to ensure the utility is setting aside enough money on an annual basis to cover these anticipated capital needs. Sources of data for projecting capital costs are asset lists, and capital improvement plans provided by the system engineers and staff.

Share assets are allocated to each department according to their approximate uses. These assets include, buildings, parking lots, vehicles, and office equipment shared by the entire city.

Budget

The objective of the budget is to ensure that the utility is generating adequate revenue to cover the anticipated costs as they occur. The basic components of the budget include combined cash balances, operating and non-operating revenue, operation and maintenance expense, capital costs, and reserves.

Assumptions

Expectations of expected revenue and expenses during the budget period are referred to as assumptions. Key assumptions impacting the utility's budget include inflation, anticipated sales and service needs, system and supplier performance, investment returns, and expected loan and grant contributions. Sources supporting these assumptions include customer usage and account data including write-offs, historical expenses, strategic plans, demographic and economic trends, income surveys, water availability forecasts, and system experience.

Fixed vs Variable Expenses

Fixed expenses are costs that do not fluctuate with changes in sales volume or production. They include expenses such as insurance, dues and subscriptions, equipment leases, payments on loans, depreciation, management salaries, and advertising. In contrast, variable expenses respond directly to changes in volume or production. Good examples of variable charges include utility energy costs and consumable supplies. In practice, most utility charges contain both fixed and variable elements. A good example of this hybrid occurs with operator expenses, which as a result of increased activity, may increase due to overtime charges. In developing utility rates fixed expenses should be covered by fixed income (base charges) and variable expenses should be covered by variable income (usage charges). Therefore, fixed and variable costs need to be carefully examined in order to ensure fair rates.

Water Usage Forecast

For the purpose of rate studies, the water usage is predicted for future years. This impacts only drinking water for Blue Lake. The forecast factors in conservation, population changes and a decrease in water loss with system upgrades.

Suggested Wastewater Rates

Suggested water rates would simply classifications into simply Residential and Commercial/Industrial. All users would be charged a flat rate for 1 standard household based on industry standards for load. Industrial users would then pay additionally for the "quality of their waste" which is defined by biological oxygen demand.

The new base rate used to cover system operations will be $54.00 in FY23 and increase by 5% each subsequent year. The Capital Replacement Reserve Fee would be discontinued and integrated into the suggested rates.

	2023	2024	2025	2026	2027
Standard Base Rate	$54.00	$55.62	$57.29	$59.01	$60.78
Per BOD (industrial and commercial flow only)	$4.38	$4.60	$4.83	$5.07	$5.32

Table 22: Suggested Wastewater Rates FY23-FY27

A BOD charge of $4.38 per pound will be charged to industrial customers. This is measured using the below formula.

Calculation is:

- C = Charge in dollars that will appear on the customer's monthly bills.
- V = Wastewater effluent flow in cubic foot
- 62.41 = Pounds per cubic foot of water
- b = Unit charge in dollars per pound of BOD
- BOD = Oxygen Demand
- PPM = 0.0000623832

C=BOD x V x 62.41 x b x PPM (Part Per Million). BOD and V will be revised annually based on the previous 12 months' readings.

Impact of suggested wastewater rates on 5 year budget

EXPENSES AND SOURCES OF FUNDS		2023	2024	2025	2026	2027
OPERATIONS & MAINTENANCE EXPENSES						
	Salaries, Wages & Benefits	286,559	303,753	321,978	341,296	361,774
	Repairs and Maintenance	4,100	7,722	7,954	8,193	8,438
	Supplies	15,604	12,801	13,185	13,580	13,988
	Utilities	48,800	52,704	56,920	61,474	66,392
	Total Operation and Maintenance Expenses:	355,063	376,979	400,037	424,543	450,592
GENERAL & ADMINISTRATIVE EXPENSES		2023	2024	2025	2026	2027
	Operating Reserve Funding	69,794	69,794	69,794	0	0
	Emergency Reserve Funding	10,000	10,000	10,000	10,000	10,000

	Replacement of Existing Capital Assets	0	0	12,273	19,555	39,405
	Debt Service	0	23,743	26,418	31,804	31,804
	Contracted Professional Services	46,815	42,870	44,156	45,481	46,845
	Other Contracted Services	28,465	17,123	17,637	18,166	18,711
	Insurance	15,534	11,606	11,954	12,313	12,682
	Other Expenses	36,167	37,836	38,971	40,140	41,344
	Total General and Administrative Expenses:	206,775	212,972	231,203	177,458	200,792
TOTAL EXPENSES		561,838	589,951	631,240	602,001	651,384
SOURCE OF FUNDS / REVENUES RECEIVED						
	Sales Revenue (Base + Usage)	479,166	575,644	604,426	634,647	666,380
	New connections	0	0	0	0	0
	Interest income	268	276	284	293	301
	Uncollectable Receivables	-1,096	-1,151	-1,209	-1,269	-1,333
	State Revenue	7,977	8,217	8,463	8,717	8,979
	Other Revenue	6,944	7,153	7,367	7,588	7,816
TOTAL REVENUE		562,325	590,138	619,332	649,976	682,143
	NET LOSS OR GAIN:	487	186	-11,908	47,975	30,759
	NET CASH FLOW (Contribution to Reserves)	80,282	79,981	80,160	77,529	80,164

Table 23: Five Year Projected Wastewater Budget with Suggested Rates

Appendix

A. Multi-year Budget Drinking Water
B. Multi-year Budget Wastewater
C. Capital Improvement Plan Drinking Water
D. Capital Improvement Plan Wastewater

Budget **Appendix A**

Blue Lake Public Utilities

Inflation Factor (%): 3.00

Loan Interest Rate (%) 4.50

EXPENSES AND SOURCES OF FUNDS	2020	2021	2022	2023	2024	2025	2026	2027
OPERATIONS & MAINTENANCE EXPENSES								
Salaries, wages and benefits			209,000	279,266	296,022	313,783	332,610	352,567
Legal	700	4,033	4,033	4,150	4,270	4,394	4,522	4,653
Engineering	1,854	3,241		0	0	0	0	0
Planning	139	411		0	0	0	0	0
Audit	5,883	5,148		0	0	0	0	0
Fuels and lubricants	2,630	2,563	2,563	2,637	2,714	2,793	2,873	2,957
Department Supplies	7,489	5,172	5,172	5,322	5,476	5,635	5,799	5,967
Chemical supplies	0	122	122	126	129	133	137	141
Maintanence and repair equipment	937	1,197	1,197	1,232	1,267	1,304	1,342	1,381
Maintanence and repair facility	28,593	16,741	16,741	8,613	8,863	9,120	9,385	9,657
maintanence and repair- vehicles	871	487	487	501	516	531	546	562
equipment rental	0	715	715	736	757	779	802	825
Lab test	1,390	1,067	1,067	1,098	1,130	1,163	1,196	1,231
contractual services	13,517	18,305	18,305	28,670	19,382	19,944	20,523	21,118
McClure right of way	50	150	150	154	159	163	168	173
Other contracted services			13,680	14,077	14,485	14,905	15,337	15,782
water	170,230	177,400	192,000	200,000	203,297	209,193	215,260	221,502
gas and electric	20,642	17,535	17,535	15,000	18,567	19,105	19,659	20,229
Total Operation and Maintenance Expenses:	254,923	254,287	482,767	561,582	577,035	602,945	630,158	658,744
GENERAL & ADMINISTRATIVE EXPENSES	2020	2021	2021	2023	2024	2025	2026	2027
Operating Reserve Funding				0	0	0	0	0
Emergency Reserve Funding				7,623	7,623	7,623	7,623	7,623
Debt Reserve Funding				0	0	0	0	0
Replacement of Existing Capital Assets				63,262	59,864	64,394	64,641	64,641
Replacement of Funded Project Assets				0	0	0	0	0
Reserves for Additional Capital Assets				0	0	0	0	0
Debt Service				15,580	15,580	15,580	4,000	0
Insurance				13,962	0	0	0	0
advertising, printing and copying	356	57	57		60	62	64	66
telephone	3,699	4,175	4,175		4,421	4,549	4,681	4,817
gas and electric	20,642	17,535	17,535		9,283	9,553	9,830	10,115
alarm system	1,694	1,758	1,758		1,861	1,915	1,971	2,028
janitorial services	1,278	1,179	1,179		1,248	1,285	1,322	1,360
computers, software and office equipment	4,687	6,442	6,442		6,821	7,019	7,222	7,432
Postage	1,347	1,796	1,796		1,902	1,957	2,014	2,072
Other expenses				19,753	0	0	0	0
Fees	7,748	7,881	840	864	889	915	942	969
County tax collector admin fee	0	0	0	0	0	0	0	0
Bad debt expense	294	540		0	0	0	0	0
travel	305	167		0	0	0	0	0
property taxes	473	472		0	0	0	0	0
meetings, conferences, and trainings	637	169		0	0	0	0	0
Misc other expense	43	4		0	0	0	0	0
depreciation	37,679	43,423	43,423					
bad debt expense	12	540	540					
city share of turbidy reduction facility debt	15,024	15,319	15,319					
Laibility Claims	5,000	0	0					
interest expense	0	1,844	1,844					
Total General and Administrative Expenses:	100,918	103,301	94,908	121,044	109,554	114,851	104,310	101,123
TOTAL EXPENSES	355,841	357,588	577,675	682,626	686,588	717,797	734,468	759,866
SOURCE OF FUNDS / REVENUES RECEIVED								
Sales Revenue (Base + Usage)	461,592	439,724		638,325	667,868	697,523	732,400	769,020
New connections				0	0	0	0	0
Interest income				0	0	0	0	0
Uncollectable Receivables				-1,277	-1,336	-1,395	-1,465	-1,538
Reconnect/Admin				0	0	0	0	0
Fees Late/NSF				0	0	0	0	0
Bulk Sales				0	0	0	0	0
public works fees	472	140		0	0	0	0	0
water sales				0	0	0	0	0
water late charges	6,858	6,771		0	0	0	0	0
insurance rebates	8,886	1,575		0	0	0	0	0
misc other revenue	211	424		0	0	0	0	0
Services to others	1,407	1,482		0	0	0	0	0
admin fees	1,529	1,766		0	0	0	0	0
water connection fee-interest earned	3,656	3,157		0	0	0	0	0
water connection fee buy-in	0	0		0	0	0	0	0
water capital reserve fund- interest earned	673	258		0	0	0	0	0
TRF water fees	10,529	10,196		0	0	0	0	0
Interest earned	25,447	20,861		0	0	0	0	0
Misc Grants	207	263						
Other Federal grants	19,906	7,094						
TOTAL REVENUE	541,373	493,711	0	637,048	666,532	696,128	730,935	767,482
NET LOSS OR GAIN:	185,532	136,123	-577,675	-45,578	-20,056	-21,668	-3,533	7,615
NET CASH FLOW (Contribution to Reserves)	185,532	136,123	-577,675	25,307	47,431	50,349	68,732	79,880
Affordability assuming MHI of $53929 for residential meters.				1.34%	1.40%	1.46%	1.54%	1.61%
Does the Budget Balance?				No	No	No	No	Yes
Positive Annual Cash Flow?				Yes	Yes	Yes	Yes	Yes

Budget | Date: 08/11/22 | **Appendix B**

Blue Lake Wastewater | Inflation Factor (%): 3.00

Loan Interest Rate (%) 4.50

EXPENSES AND SOURCES OF FUNDS	2020	2021	2022	2023	2024	2025	2026	2027
OPERATIONS & MAINTENANCE EXPENSES								
Salaries, Wages & Benefits	235,011	253,098	238,798	286,559	303,753	321,978	341,296	361,774
Repairs and Maintenance	4,255	5,194	7,279	4,100	7,722	7,954	8,193	8,438
Supplies	11,232	12,698	12,066	15,604	12,801	13,185	13,580	13,988
Utilities	49,197	47,614	45,185	48,800	52,704	56,920	61,474	66,392
Total Operation and Maintenance Expenses:	299,695	318,604	303,328	355,063	376,979	400,037	424,543	450,592
GENERAL & ADMINISTRATIVE EXPENSES	2020	2021	2021	2023	2024	2025	2026	2027
Operating Reserve Funding				69,794	69,794	69,794	0	0
Emergency Reserve Funding				10,000	10,000	10,000	10,000	10,000
Debt Reserve Funding				0	0	0	0	0
Replacement of Existing Capital Assets				0	0	12,273	19,555	39,405
Replacement of Funded Project Assets				0	0	0	0	0
Reserves for Additional Capital Assets				0	0	0	0	0
Debt Service				0	23,743	26,418	31,804	31,804
Contracted Professional Services	14,744	27,979	40,409	46,815	42,870	44,156	45,481	46,845
Other Contracted Services	24,222	31,632	16,140	28,465	17,123	17,637	18,166	18,711
Insurance	7,983	10,002	10,940	15,534	11,606	11,954	12,313	12,682
Other Expenses	30,410	34,486	35,664	36,167	37,836	38,971	40,140	41,344
Depreciation	132,513	105,171	102,006					
Total General and Administrative Expenses:	209,872	209,270	205,159	206,775	212,972	231,203	177,458	200,792
TOTAL EXPENSES	509,567	527,874	508,487	561,838	589,951	631,240	602,001	651,384
SOURCE OF FUNDS / REVENUES RECEIVED								
Sales Revenue (Base + Usage)	382,263	362,612	341,036	479,166	575,644	604,426	634,647	666,380
New connections				0	0	0	0	0
Interest income	1,473	1,632	260	268	276	284	293	301
Uncollectable Receivables				-1,096	-1,151	-1,209	-1,269	-1,333
Reconnect/Admin				0	0	0	0	0
Fees Late/NSF				0	0	0	0	0
Bulk Sales				0	0	0	0	0
State Revenue			7,745	7,977	8,217	8,463	8,717	8,979
Other Revenue	16,027	8,739	6,742	6,944	7,153	7,367	7,588	7,816
Transfers from outside (Capital Revenue)	91,014	30,338	144,861					
TOTAL REVENUE	490,777	403,321	500,644	562,325	590,138	619,332	649,976	682,143
NET LOSS OR GAIN:	-18,790	-124,553	-7,843	487	186	-11,908	47,975	30,759
NET CASH FLOW (Contribution to Reserves)	-18,790	-124,553	-7,843	80,282	79,981	80,160	77,529	80,164
Does the Budget Balance?				Yes	Yes	No	Yes	Yes
Positive Annual Cash Flow?				Yes	Yes	Yes	Yes	Yes

Capital Replacement Program **AWWA Cash-Needs Approach** **Appendix C**

Blue Lake Public Utilities

Date: 8/16/22

System Number: 0

Service Connections: 681

Quantity	Asset	Year Acquired	Unit Cost (Historic, Current or Future)	Cost Type (H, C, F)	% Belonging to Water	Estimated Historic Cost (Water only)	Normal Estimated Life	Current Age	Estimated Current Cost	Planned Remaining Life	Estimated Remaining Life	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Cash Required	Existing Reserves	Annual Reserve Required
	Replacement of Existing Capital Assets																	
1	400000 gal redwood tank	1974	96,000	H	100%	$96,000	40	48	260,320	-8	1	301,222	5%	95%	0%	$15,061	12,867	2,194
1	Ford Ranger Unit 172	2007	9,499	H	50%	$4,750	20	15	6,487	5	1	8,413	100%	0%	0%	$8,413	6,413	2,001
1	1991 Ford F600 dump truck	1991	10,000	H	50%	$5,000	10	31	9,523	-21	2	6,655	100%	0%	0%	$6,655	9,414	-1,388
1	1994 John Deere Loader	1994	14,000	H	50%	$7,000	10	28	12,526	-18	2	9,316	100%	0%	0%	$9,316	12,383	-1,545
1	500000 gal redwood tank	1986	311,850	H	100%	$311,850	30	36	658,980	-6	3	735,203	5%	95%	0%	$36,760	32,572	1,335
1	1993 Ford Ranger Pickup	1993	5,372	H	50%	$2,686	10	29	4,907	-19	3	3,575	100%	0%	0%	$3,575	4,851	Not Cap.
179	3/4" services and boxes	1974	29,535	H	100%	$5,286,765	50	48	14,335,922	2	5	22,077,950	2%	50%	48%	$441,559	283,433	30,746
1	Scada system	2009	6,597	H	100%	$6,597	20	13	8,643	7	10	11,686	10%	50%	40%	$1,169	854	29
1	Scada system	2019	127,483	H	100%	$127,483	10	3	135,684	7	10	169,670	10%	75%	15%	$16,967	13,413	318
1	SCADA system	2002	45,333	H	100%	$45,333	30	20	68,696	10	11	106,875	5%	50%	45%	$5,344	3,395	165
1	Radio operated alarm	2011	2,020	H	50%	$1,010	20	11	1,269	9	12	1,789	10%	50%	40%	$179	125	Not Cap.
2	Centrifugal pump	2012	13,822	H	100%	$27,644	20	10	34,030	10	12	48,968	100%	0%	0%	$48,968	33,640	1,166
1	City hall roof	2004	4,943	H	100%	$4,943	30	18	7,185	12	20	11,653	100%	0%	0%	$11,653	7,103	200
1	10" compound meter	1974	11,250	H	100%	$11,250	60	48	30,506	12	20	62,528	100%	0%	0%	$62,528	30,157	1,473
111	1" services and boxes	1974	21,090	H	100%	$2,340,990	60	48	6,347,975	12	20	13,011,341	2%	50%	48%	$260,227	125,505	6,129
25	8" gate valves	1974	6,250	H	100%	$156,250	60	48	423,697	12	20	868,445	5%	50%	45%	$43,422	20,942	1,023
50	6" gate valves	1974	9,500	H	100%	$475,000	60	48	1,288,040	12	20	2,640,074	5%	50%	45%	$132,004	63,664	3,109
19,981	6" AC pipe	1974	6	H	100%	$125,025	60	48	339,026	12	20	694,895	5%	50%	45%	$34,745	16,757	818
17,397	8" AC pipe	1974	7	H	100%	$125,025	60	48	339,026	12	20	694,895	5%	50%	45%	$34,745	16,757	818
6,100	10" AC line	1974	8	H	100%	$50,894	60	48	138,007	12	20	282,871	5%	95%	0%	$14,144	6,821	333
1	Water district connection	1974	35,559	H	100%	$35,559	60	48	96,424	12	20	197,639	5%	50%	45%	$9,882	4,766	233
1	ties, mains, laterals, equipment	1979	46,284	H	100%	$46,284	60	43	113,120	17	20	257,249	5%	75%	20%	$12,862	5,591	334
500	8" water line	1980	30	H	100%	$15,000	60	42	35,906	18	20	83,371	5%	95%	0%	$4,169	1,775	110
1	TACO MDL suction pump	2006	5,021	H	100%	$5,021	25	16	7,002	9	20	10,261	100%	10%	-10%	$10,261	6,921	143
1	Water Line RR and G	2006	2,517	H	100%	$2,517	25	16	3,510	9	20	5,144	5%	95%	0%	$257	173	4
1	Acacia waterline extension	2007	9,766	H	100%	$9,766	25	15	13,338	10	20	19,957	5%	95%	0%	$998	659	15
4,146	10" AC line	1986	7	H	100%	$29,400	60	36	62,126	24	30	163,407	5%	50%	45%	$8,170	3,071	151
3	fire hydrants	1986	7,500	H	100%	$22,500	60	36	47,545	24	30	125,056	5%	50%	45%	$6,253	2,350	115
1	Water Pump station	1986	27,000	H	100%	$27,000	60	36	57,055	24	30	150,067	5%	50%	45%	$7,503	2,820	138
1	50KW Generator w/ trailer	1999	9,894	H	50%	$4,947	50	23	7,979	27	30	20,659	100%	0%	0%	$20,659	7,887	377
1	Booster station	1974	1,206	H	100%	$1,206	80	48	3,270	32	35	11,873	10%	50%	40%	$1,187	323	22
36	fire hydrants	1974	12,350	H	100%	$444,600	80	48	1,205,605	32	35	4,377,231	5%	50%	45%	$218,862	59,590	4,035
1,512	6" line - BL blvd	1991	10	H	100%	$15,000	60	31	28,569	29	35	83,371	5%	95%	0%	$4,169	1,412	69
1	4" water line - piersall, bl blvd	1991	6,560	H	100%	$6,560	60	31	12,494	29	35	36,461	5%	95%	0%	$1,823	618	30
1	6" line and Hydrant - Shamrock	1991	9,465	H	100%	$9,465	60	31	18,027	29	35	52,607	5%	95%	0%	$2,630	891	43
1	valve hatchery and taylor	1995	5,438	H	100%	$5,438	60	27	9,531	33	35	30,225	75%	25%	0%	$22,669	7,066	392
1	Water line Greenhill rd	1995	18,982	H	100%	$18,982	60	27	33,269	33	35	105,503	5%	50%	45%	$5,275	1,644	91
1	Rancheria extension	1993	26,719	H	100%	$26,719	60	29	48,817	31	38	148,506	10%	50%	40%	$14,851	4,826	229
1	waterline buckley road	1994	17,517	H	100%	$17,517	60	28	31,346	32	40	97,360	5%	95%	0%	$4,868	1,549	72
1,000	4" water line and pump	2001	29	H	100%	$29,251	60	21	45,257	39	40	162,579	5%	50%	45%	$8,129	2,237	128
250	8" line chartin Rd	2002	68	H	100%	$17,025	50	20	25,799	30	40	71,098	5%	95%	0%	$3,555	1,275	49
8	8" vales Monda way	2003	16,935	H	100%	$135,480	50	19	201,078	31	40	565,775	5%	50%	45%	$28,289	9,939	392
1	Valve boxes/Pave trenches	2003	6,334	H	100%	$6,334	50	19	9,401	31	40	26,451	100%	0%	0%	$26,451	9,293	367
1	4th st water line and valves	2008	28,719	H	100%	$28,719	50	14	38,418	36	40	119,933	5%	95%	0%	$5,997	1,899	88
1	Blue Lake Blvd improvements	2002	38,341	H	100%	$38,341	60	20	58,100	40	41	213,101	5%	50%	45%	$10,655	2,872	165
200	10' line blue lake blvd	2002	19,041	H	100%	$3,808,200	60	20	5,770,781	40	41	21,166,168	2%	50%	48%	$423,323	114,093	6,546

Capital Replacement Program **AWWA Cash-Needs Approach** **Appendix D**

Blue Lake Wastewater

Date: 8/16/22

System Number: 0

Service Connections: 689

Quantity	Asset	Year Acquired	Unit Cost (Historic, Current or Future)	Cost Type (H, C, F)	% Belonging to Sewer	Estimated Historic Cost (Sewer only)	Normal Estimated Life	Current Age	Estimated Current Cost	Planned Remaining Life	Estimated Remaining Life	Estimated Future Cost	Fund with Cash	Fund with Grant	Fund with Loan	Cash Required	Existing Reserves	Annual Reserve Required
	Replacement of Existing Capital Assets																	
1	50KW generator w/trailer (1/2)	1999	9,894	H	50%	$4,947	10	23	7,979	-13	1	6,648	100%	0%	0%	$6,648	6,648	0
1	Chlorinating system	2000	54,390	H	100%	$54,390	10	22	85,918	-12	1	73,096	25%	0%	75%	$18,274	18,274	0
1	Pipeline camera	2002	4,864	H	100%	$4,864	10	20	7,371	-10	1	6,537	100%	0%	0%	$6,537	6,537	0
1	Pipeline camera (add-on)	2002	1,574	H	100%	$1,574	10	20	2,385	-10	1	2,115	100%	0%	0%	$2,115	2,115	0
1	Sewage channel grinder	2004	72,457	H	100%	$72,457	10	18	105,328	-8	1	97,376	25%	0%	75%	$24,344	24,344	0
1	Pump station	2005	34,856	H	100%	$34,856	15	17	49,627	-2	1	54,305	25%	0%	75%	$13,576	13,576	0
1	R158 Ford Ranger/unit 172 (1/2)	2007	9,499	H	50%	$4,750	7	15	6,487	-8	1	5,841	100%	0%	0%	$5,841	5,841	0
1	Collection pump	2007	6,839	H	100%	$6,839	10	15	9,341	-5	1	9,191	100%	0%	0%	$9,191	9,191	0
1	John Deere 54" Riding Lawnmower	2012	11,659	H	100%	$11,659	5	10	14,352	-5	1	13,516	100%	0%	0%	$13,516	13,516	0
1	Forklift	2012	5,960	H	100%	$5,960	5	10	7,337	-5	1	6,909	100%	0%	0%	$6,909	6,909	0
1	2012 Ford F150	2012	19,148	H	100%	$19,148	5	10	23,571	-5	1	22,198	25%	0%	75%	$5,549	5,549	0
3,770	4" Laterals	1955	3	H	100%	$11,310	50	67	45,518	-17	2	49,582	25%	75%	0%	$12,395	12,395	0
64	3' Manholes	1956	167	H	100%	$10,688	50	66	42,130	-16	2	46,855	25%	75%	0%	$11,714	11,714	0
1	Sewage pumping station	1958	11,352	H	100%	$11,352	50	64	42,926	-14	2	49,766	25%	75%	0%	$12,442	12,442	0
1	VC Pipe	1959	4,974	H	100%	$4,974	50	63	18,422	-13	2	21,806	25%	75%	0%	$5,451	5,451	0
1	VC Pipe	1960	62,418	H	100%	$62,418	50	62	226,415	-12	2	273,635	15%	85%	0%	$41,045	41,045	0
1	Aerator, 5 hp, Model FSS Endura, Aqua-Jet (3 of 3)	2011	7,144	H	100%	$7,144	10	11	8,979	-1	2	9,601	100%	0%	0%	$9,601	9,601	0
1	Aerator, 5 hp, Model FSS Endura, Aqua-Jet (2 of 3)	2011	7,144	H	100%	$7,144	10	11	8,979	-1	2	9,601	100%	0%	0%	$9,601	9,601	0
1	1991 Ford F600 dump truck (1/3)	1991	10,000	H	50%	$5,000	10	31	9,523	-21	2	6,720	100%	0%	0%	$6,720	6,720	0
1	1994 John Deere loader (1/3)	1994	14000	H	50%	$7,000	10	28	12,526	-18	2	9,407	100%	0%	0%	$9,407	9,407	0
1	Control panel/upgrade	2008	24,584	H	100%	$24,584	15	14	32,886	1	2	38,301	25%	0%	75%	$9,575	9,575	0
1	Lift station wetwell	1974	24,400	H	100%	$24,400	50	48	66,165	2	3	106,967	15%	85%	0%	$16,045	16,045	0
1	Aerator, 5 hp, Model FSS Endura, Aqua-Jet (1 of 3)	2011	7,144	H	100%	$7,144	10	11	8,979	-1	3	9,601	100%	0%	0%	$9,601	9,601	0
1	WWTP baffle curtain	2014	12,856	H	100%	$12,856	10	8	15,181	2	3	17,277	100%	0%	0%	$17,277	17,277	0
1	1993 Ford Ranger pickup (1/2)	1993	5372	H	50%	$2,686	10	29	4,907	-19	3	3,610	100%	0%	0%	$3,610	3,610	0
1	Ind Park lift station rehab	2009	26,639	H	100%	$26,639	15	13	34,902	2	3	41,503	25%	0%	75%	$10,376	10,376	0
1	Generator - Industrial Park	2014	19,533	H	100%	$19,533	10	8	23,066	2	3	26,251	25%	0%	75%	$6,563	6,563	0
1	Treatment plant - Rancheria Upgrades	2015	613,430	H	100%	$613,430	10	7	709,488	3	4	824,399	15%	85%	0%	$123,660	123,660	0
1	Sewer treatment plant	2010	8,262	H	100%	$8,262	15	12	10,602	3	4	12,872	100%	0%	0%	$12,872	12,872	0
1	Sewer treatment plant	2005	26,636	H	100%	$26,636	15	17	37,923	-2	5	41,498	25%	0%	75%	$10,375	10,375	0
1	Sludge Removal	2010	200,000	H	100%	$200,000	15	12	256,649	3	5	311,593	100%	0%	0%	$311,593	311,593	0
1	Radio-operated Alarm system unit (1 of 4)	2011	2,020	H	100%	$2,020	5	11	2,539	-6	5	2,342	100%	0%	0%	$2,342	2,342	0
1	Radio-operated Alarm system unit (1 of 4)	2011	2,020	H	100%	$2,020	5	11	2,539	-6	5	2,342	100%	0%	0%	$2,342	2,342	0
1	Mains, laterals, equipment	1979	138,618	H	100%	$138,618	50	43	338,787	7	8	607,688	15%	85%	0%	$91,153	91,153	0
1	Railroad Ave main	2005	8,925	H	100%	$8,925	25	17	12,707	8	9	18,687	100%	0%	0%	$18,687	18,687	0
1	Sewer treatment filter	2005	1,722	H	100%	$1,722	25	17	2,452	8	9	3,605	100%	0%	0%	$3,605	3,605	0
1	Lift station	2006	31,054	H	100%	$31,054	25	16	43,304	9	10	65,020	25%	0%	75%	$16,255	16,255	0
1	Aerator, 5 hp, Model FSS Endura, Aqua-Jet - Add-on (2	2012	417	H	100%	$417	10	10	513	0	10	560	100%	0%	0%	$560	560	0
1	Aerator, 5 hp, Model FSS Endura, Aqua-Jet - Add-on (3	2012	417	H	100%	$417	10	10	513	0	10	560	100%	0%	0%	$560	560	0
1	Flow meters	2006	5,102	H	100%	$5,102	25	16	7,115	9	10	10,682	100%	0%	0%	$10,682	10,682	0
1	WWTP	2007	21,848	H	100%	$21,848	25	15	29,840	10	11	45,745	25%	0%	75%	$11,436	11,436	0
1	WWTP Hydro	2007	12,220	H	100%	$12,220	25	15	16,690	10	11	25,586	25%	0%	75%	$6,396	6,396	0
1	Ind Park lift station	2007	6,492	H	100%	$6,492	25	15	8,867	10	11	13,593	100%	0%	0%	$13,593	13,593	0
1	Waste water pumps	2008	5,764	H	100%	$5,764	25	14	7,711	11	12	12,069	100%	0%	0%	$12,069	12,069	0
1,270	8" line	1986	20	H	100%	$25,400	50	36	53,674	14	15	111,351	15%	85%	0%	$16,703	16,703	0
2	lift station pumps	1986	7,000	H	100%	$14,000	50	36	29,584	14	15	61,375	25%	75%	0%	$15,344	15,344	0
2	lift station pumps	1986	7,000	H	100%	$14,000	50	36	29,584	14	15	61,375	25%	75%	0%	$15,344	15,344	0
580	4" force main	1986	100	H	100%	$58,000	50	36	122,562	14	15	254,267	15%	85%	0%	$38,140	38,140	0
6	Manholes	1986	1,500	H	100%	$9,000	50	36	19,018	14	15	39,455	25%	0%	75%	$9,864	9,864	0
1	Lift station #2	1986	8,000	H	100%	$8,000	50	36	16,905	14	15	35,071	25%	0%	75%	$8,768	8,768	0
1	Lift station #3	1986	8,000	H	100%	$8,000	50	36	16,905	14	15	35,071	25%	0%	75%	$8,768	8,768	0

1	150 GPM submersible pump	1998	5585	H	100%	$5,585	10	24	9,197	-14	15	7,506	100%	0%	0%	$7,506	7,506	0
1	Taylor Way lift station	2015	81,808	H	100%	$81,808	25	7	94,618	18	19	171,288	15%	85%	0%	$25,693	25,693	0
1	Sewer ponds	1955	72,000	C	100%	$17,369	50	67	72,000	-17	20	130,040	15%	85%	0%	$19,506	19,506	0
1	Sewer ponds	1986	33,676	H	100%	$33,676	50	36	71,162	14	20	147,632	15%	85%	0%	$22,145	22,145	0
942	6" line H St.	1991	15	H	100%	$14,130	50	31	26,912	19	20	61,945	25%	0%	75%	$15,486	15,486	0
1	Sewer line-alley behind Shulers	1991	11,135	H	100%	$11,135	50	31	21,207	19	20	48,815	25%	0%	75%	$12,204	12,204	0
1	Treatment plant project	1993	38,381	H	100%	$38,381	50	29	70,123	21	22	168,259	15%	85%	0%	$25,239	25,239	0
1	Well conversion	1993	27,500	H	100%	$27,500	50	29	50,243	21	22	120,557	15%	85%	0%	$18,084	18,084	0
1	Sewer line-Blue Lake Ave	1994	4,000	H	100%	$4,000	50	28	7,158	22	23	17,536	25%	0%	75%	$4,384	4,384	0
1	Sewer line-Blue Lake Ave	1995	14,250	H	100%	$14,250	50	27	24,975	23	24	62,471	25%	0%	75%	$15,618	15,618	0
1	Sewer line 2nd & 3rd alley	1995	19,826	H	100%	$19,826	50	27	34,748	23	24	86,915	25%	0%	75%	$21,729	21,729	0
1	Sewer line-Railroad Ave	1996	16,090	H	100%	$16,090	50	26	27,620	24	25	70,537	25%	0%	75%	$17,634	17,634	0
1	WWTP Rock Replacement Project	2021	44,861	H	100%	$44,861	25	1	45,803	24	25	93,929	25%	0%	75%	$23,482	23,482	0
1	Binnie Sub main line	2001	6,179	H	100%	$6,179	50	21	9,560	29	30	27,088	25%	0%	75%	$6,772	6,772	0
1	Lift station rehab	2001	8,926	H	100%	$8,926	50	21	13,810	29	30	39,131	25%	0%	75%	$9,783	9,783	0
1	Skinner Store extension	2001	13,297	H	100%	$13,297	50	21	20,573	29	30	58,293	25%	0%	75%	$14,573	14,573	0
2,800	8" force main & pump	2002	66	H	100%	$184,800	50	20	280,038	30	31	810,146	15%	85%	0%	$121,522	121,522	0
1	Chartin Rd line paving	2002	6,143	H	100%	$6,143	50	20	9,309	30	31	26,930	25%	0%	75%	$6,733	6,733	0
200	8" sewer line, 4 manholes	2002	203	H	100%	$40,508	50	20	61,384	30	31	177,583	15%	85%	0%	$26,637	5,871	670
850	8" line-Railroad	2003	81	H	100%	$68,850	50	19	102,186	31	32	301,832	15%	85%	0%	$45,275	0	1,415
1	Sewer treatment filter	2004	9,668	H	100%	$9,668	50	18	14,054	32	33	42,384	25%	0%	75%	$10,596	0	321
1	Treatment plant headworks	2004	13,714	H	100%	$13,714	50	18	19,936	32	33	60,121	25%	0%	75%	$15,030	0	455
1	Sewer treatment filter	2005	25,025	H	100%	$25,025	50	17	35,630	33	34	109,707	15%	85%	0%	$16,456	0	484