



Bear Valley Water District Wastewater Cost of Service Rate Study 2022

Draft Calculation Tables

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BARTLE WELLS ASSOCIATES
INDEPENDENT PUBLIC FINANCE ADVISORS

3/16/22



Table 1: Current Monthly Wastewater Rates
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Current Monthly Wastewater Rates

Residential Rates

Single Family, Multi Family	\$/month	\$96.35 per month
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Non-Residential Rates

Commercial	\$/gallon	\$0.068 per gallon
	minimum charge	\$85.81 minimum charge

Table 2: Historical Wastewater Demand & Revenue Calculation
 Bear Valley Water District
 Wastewater Cost of Service Rate Study 2022

Residential Demand (Total by Fiscal Year)					
	# EDUs	Gallons [1]	% Demand	FY 2021-22 Bills	% Revenue
2021-22	549	9,313,587	81%	\$630,000	81%
2020-21	549	9,313,587	100%	\$630,032	45%
2019-20	549	9,313,587	100%	\$610,692	100%
Residential Demand Assumption - 21-22 Average	549	9,313,587	80%		
<i>Assumed Residential Gallons per Month</i>		1,414			
<i>Assumed Residential hcf per Month</i>		1.89			
Commercial Demand (Total by Fiscal Year)					
	# Users	Gallons [2]	% Demand	FY 2021-22 Bills	% Revenue
2021-22	101	2,205,882	19%	\$150,000	19%
2020-21	101	2,127,588	19%	\$150,866	19%
2019-20	101	2,530,605	21%	\$169,208	22%
Comm.Demand Assumption - 3 year average	101	2,288,025	20%		
<i>Average Commercial Gallons per Month</i>		1,888			
<i>Average Commercial hcf per Month</i>		2.52			
Total Assumed Demand	650	11,601,613	100%		

[1] Current Residential rates assume an average of 1.89 hcf per month per account for 2021-22, see Table 1
 Since detailed water use data was not available, BWA estimated a typical residential user consumes 3 ccf per month

[2] Charges reflect prior year water demand, e.g. FY 2021-22 bills reflect FY 2020-21 water use

Table 3: Current & Projected Wastewater Rate Revenue
 Bear Valley Water District
 Wastewater Cost of Service Rate Study 2022

Current & Projected Revenues

Projection Year Fiscal Year	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Budget 2021-22	% Annual Escalation	1 2022-23	2 2023-24	3 2024-25	4 2025-26	5 2026-27
								post-covid				
OPERATING REVENUES												
Residential	\$589,575	\$581,925	\$589,935	\$610,692	\$630,032	\$630,000	0.0%	\$630,000	\$630,000	\$630,000	\$630,000	\$630,000
Commercial	\$165,537	\$204,119	\$198,719	\$169,208	\$150,866	\$150,000	0.0%	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Revenue Total:	\$755,112	\$786,044	\$788,654	\$779,900	\$780,898	\$780,000		\$780,000	\$780,000	\$780,000	\$780,000	\$780,000
ALL OTHER REVENUES												
Interest Income - LAIF	\$600	\$2,259	\$500	\$4,318	\$7,448	\$1,500	TBD	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
Late Fees, Penalties & Interest	\$4,000	\$10,152	\$5,000	\$9,411	\$7,941	\$2,500	0.0%	\$2,500	\$2,500	\$2,500	\$2,500	\$2,500
Expense Reimbursements - USFS	\$1,895	\$2,384	\$1,500	\$3,863	\$2,870	\$4,805	0.0%	\$6,000	\$3,000	\$1,300	\$1,300	\$1,300
Expense Reimbursements - Concessionnaire	\$3,285	\$4,439	\$3,000	\$5,290	\$4,608	\$3,830	0.0%	\$0	\$0	\$0	\$0	\$0
Misc Other Income	\$0	\$0	\$0	\$190	\$0	\$5,200	0.0%	\$0	\$0	\$0	\$0	\$0
Revenue Total:	\$9,780	\$19,234	\$10,000	\$23,072	\$22,868	\$17,835		\$10,000	\$7,000	\$5,300	\$5,300	\$5,300
TOTAL ALL REVENUES	\$764,892	\$805,278	\$798,654	\$802,972	\$803,766	\$797,835		\$790,000	\$787,000	\$785,300	\$785,300	\$785,300
Revenues by Category												
Residential Rate Revenues	\$589,575	\$581,925	\$589,935	\$610,692	\$630,032	\$630,000	0.0%	\$630,000	\$630,000	\$630,000	\$630,000	\$630,000
Commercial Rate Revenues	\$165,537	\$204,119	\$198,719	\$169,208	\$150,866	\$150,000	0.0%	\$150,000	\$150,000	\$150,000	\$150,000	\$150,000
Interest Income	\$600	\$2,259	\$500	\$4,318	\$7,448	\$1,500	TBD	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
Other Operating Revenues	\$9,180	\$16,975	\$9,500	\$18,754	\$15,420	\$16,335	0.0%	\$8,500	\$5,500	\$3,800	\$3,800	\$3,800
TOTAL ALL REVENUES	\$764,892	\$805,278	\$798,654	\$802,972	\$803,766	\$797,835		\$790,000	\$787,000	\$785,300	\$785,300	\$785,300
<i>annual % change</i>		5%	-1%	1%	0%	-1%		-1%	0%	0%	0%	0%

Table 4: Current & Projected Operating Expenditures
 Bear Valley Water District
 Wastewater Cost of Service Rate Study 2022

Current and Projected Operating Expenditures

Projection Year Fiscal Year	Actual 2016-17	Actual 2017-18	Actual 2018-19	Actual 2019-20	Actual 2020-21	Budget 2021-22	Annual Escalation	1 2022-23	2 2023-24	3 2024-25	4 2025-26	5 2026-27
OPERATIONS & MAINTENANCE												
Salaries and Benefits [1]	\$296,516	\$321,781	\$324,589	\$360,447	\$378,211	\$395,022	3-5%	\$414,774	\$427,217	\$440,033	\$453,234	\$466,831
Director Expenses - Meetings, Elections, Training	\$2,988	\$2,363	\$1,678	\$1,869	\$2,000	\$2,000	3%	\$2,060	\$2,122	\$2,185	\$2,251	\$2,319
Operator Education, Training & Certifications	\$1,356	\$490	\$756	\$364	\$450	\$1,000	3%	\$1,030	\$1,061	\$1,093	\$1,126	\$1,159
Gas, Diesel, Oil & Filters	\$5,031	\$3,282	\$2,766	\$3,198	\$2,694	\$3,000	3%	\$3,090	\$3,183	\$3,278	\$3,377	\$3,478
Insurance	\$21,480	\$24,702	\$22,574	\$19,241	\$16,294	\$18,000	3%	\$28,500	\$29,355	\$30,236	\$31,143	\$32,077
Memberships & Conferences	\$5,300	\$5,968	\$7,078	\$6,350	\$5,241	\$5,500	3%	\$5,665	\$5,835	\$6,010	\$6,190	\$6,376
Office Expenses & Supplies	\$15,140	\$13,916	\$9,337	\$10,053	\$9,216	\$7,500	3%	\$7,725	\$7,957	\$8,195	\$8,441	\$8,695
Field Expenses & Supplies	\$18,771	\$23,682	\$20,074	\$26,109	\$19,353	\$20,000	3%	\$20,600	\$21,218	\$21,855	\$22,510	\$23,185
Grooming, Snow Removal & Vehicle Storage	\$4,030	\$2,682	\$3,003	\$2,636	\$3,268	\$3,500	3%	\$3,605	\$3,713	\$3,825	\$3,939	\$4,057
General Engineering & Consulting	\$5,081	\$6,179	\$5,314	\$315	\$9,621	\$5,000	3%	\$5,150	\$5,305	\$5,464	\$5,628	\$5,796
General Legal & Accounting	\$10,284	\$14,545	\$16,224	\$15,515	\$9,780	\$10,000	3%	\$10,300	\$10,609	\$10,927	\$11,255	\$11,593
Equipment Rental	\$9,039	\$558	\$429	\$226	\$778	\$800	3%	\$824	\$849	\$874	\$900	\$927
Repairs & Maintenance	\$83,267	\$80,116	\$48,178	\$73,394	\$46,610	\$60,000	3%	\$61,800	\$63,654	\$65,564	\$67,531	\$69,556
Laboratory Fees	\$26,090	\$21,477	\$14,702	\$12,727	\$13,439	\$12,000	3%	\$12,360	\$12,731	\$13,113	\$13,506	\$13,911
Regulatory Reporting & Compliance Projects	\$6,468	\$6,271	\$6,305	\$6,330	\$6,242	\$6,500	3%	\$6,695	\$6,896	\$7,103	\$7,316	\$7,535
Taxes, Fees, Licenses & Assessments	\$29,764	\$30,173	\$34,325	\$40,438	\$42,985	\$45,000	3%	\$46,350	\$47,741	\$49,173	\$50,648	\$52,167
Utilities	\$60,999	\$50,328	\$59,778	\$61,623	\$51,386	\$55,000	3%	\$56,650	\$58,350	\$60,100	\$61,903	\$63,760
TOTAL ALL OPERATING EXPENDITURES	\$601,604	\$608,513	\$577,110	\$640,835	\$617,568	\$649,822		\$687,178	\$707,793	\$729,027	\$750,897	\$773,424
<i>annual % change</i>		1%	-5%	11%	-4%	5%		6%	3%	3%	3%	3%

[1] Salaries and Benefits projected to increase 5% in year 1 and 3% thereafter per budget adjustments

Table 6: Current Debt Service
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Current & Proposed Debt Service

Projection Fiscal Year	1 2022-23	2 2023-24	3 2024-25	4 2025-26	5 2026-27	6 2027-28	Total Payments
Current Debt Service							
2013 Loan [1]	\$56,337	\$56,337	\$56,337	\$56,337	\$56,337	\$42,253	\$380,275
Total Current Debt Service	\$56,337	\$56,337	\$56,337	\$56,337	\$56,337	\$42,253	\$380,275

1 *Debt Service Coverage Requirement = Net Operating Revenues at least 125% of annual payments*

Table 7: Current Fund Balance
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Beginning Fund Balance and Minimum Reserves

Current Wastewater Reserve Fund Balance	8/31/21
O&M Reserve Fund	\$150,000
CIP Reserve Fund	\$425,000
Total Unrestricted Cash Fund Balance	\$575,000

BWA Recommended Minimum Reserve Fund Balance							
	Projection Year	0	1	2	3	4	5
	Fiscal Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
O&M Reserve Fund		\$324,911	\$343,589	\$353,896	\$364,513	\$375,449	\$386,712
6 Months Annual O&M Expenditures							
CIP Reserve Fund		\$98,024	\$100,965	\$103,994	\$107,114	\$110,327	\$113,637
3% Current Asset Value ¹							
Total Minimum Reserve Fund Balance		\$422,935	\$444,554	\$457,890	\$471,627	\$485,776	\$500,349

Notes

1 Annual replacement cost estimated using 3% wastewater system asset value from Balance Sheet 8/31/2021, escalated 3% per year \$3,267,468

Table 8: 5-Year Cash Flow Projection
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

5-Year Cash Flow Projection: Proposed

Projection	0	1	2	3	4	5
Fiscal Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Adoption Date		7/1/22	7/1/23	7/1/24	7/1/25	7/1/26
Months Effective		12	12	12	12	12
Proposed Rate Revenue Increase**	0.0%	6.0%	3.0%	3.0%	3.0%	3.0%
<i>Growth</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>	<i>0.0%</i>
Beginning Cash Fund Balance	\$575,000	\$566,676	\$559,961	\$554,486	\$551,574	\$553,106
REVENUE						
Operating Revenue						
Residential Rate Revenue	\$630,000	\$667,800	\$687,834	\$708,469	\$729,723	\$751,615
Commercial Rate Revenue	\$150,000	\$159,000	\$163,770	\$168,683	\$173,744	\$178,956
Interest Income *	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500	\$1,500
All Other Operating Revenue	\$16,335	\$8,500	\$5,550	\$3,800	\$3,800	\$3,800
Total Operating Revenue	\$797,835	\$836,800	\$858,654	\$882,452	\$908,767	\$935,871
Total Revenue	\$797,835	\$836,800	\$858,654	\$882,452	\$908,767	\$935,871
EXPENDITURES						
Operating Expenses						
Total Personnel Costs	\$395,022	\$414,774	\$427,217	\$440,033	\$453,234	\$466,831
Other O&M	\$254,800	\$272,404	\$280,576	\$288,993	\$297,663	\$306,593
Total Operating Expenses	\$649,822	\$687,178	\$707,793	\$729,027	\$750,897	\$773,424
Non-Operating Expenses						
Total CIP (Smoothed)	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000	\$100,000
Debt Service	\$56,337	\$56,337	\$56,337	\$56,337	\$56,337	\$42,253
Total Non-Operating Expenditures	\$156,337	\$156,337	\$156,337	\$156,337	\$156,337	\$142,253
Total Expenditures	\$806,159	\$843,515	\$864,130	\$885,364	\$907,234	\$915,677
Net Revenue	(\$8,324)	(\$6,715)	(\$5,476)	(\$2,911)	\$1,532	\$20,193
<i>Debt Service Coverage (1.25x)</i>	<i>2.6</i>	<i>2.7</i>	<i>2.7</i>	<i>2.7</i>	<i>2.8</i>	<i>3.8</i>
Ending Fund Balance	\$566,676	\$559,961	\$554,486	\$551,574	\$553,106	\$573,300
<i>Fund Balance Minimum</i>	<i>\$422,935</i>	<i>\$444,554</i>	<i>\$457,890</i>	<i>\$471,627</i>	<i>\$485,776</i>	<i>\$500,349</i>

** First year rate increase is a cost-of-service based adjustment - further rate increases to be determined on an annual basis by the Board according to the annual change in Consumer Price Index (estimated 3%)

5-Year Cash Flow Projection

Wastewater Revenue, Expenses & Reserves

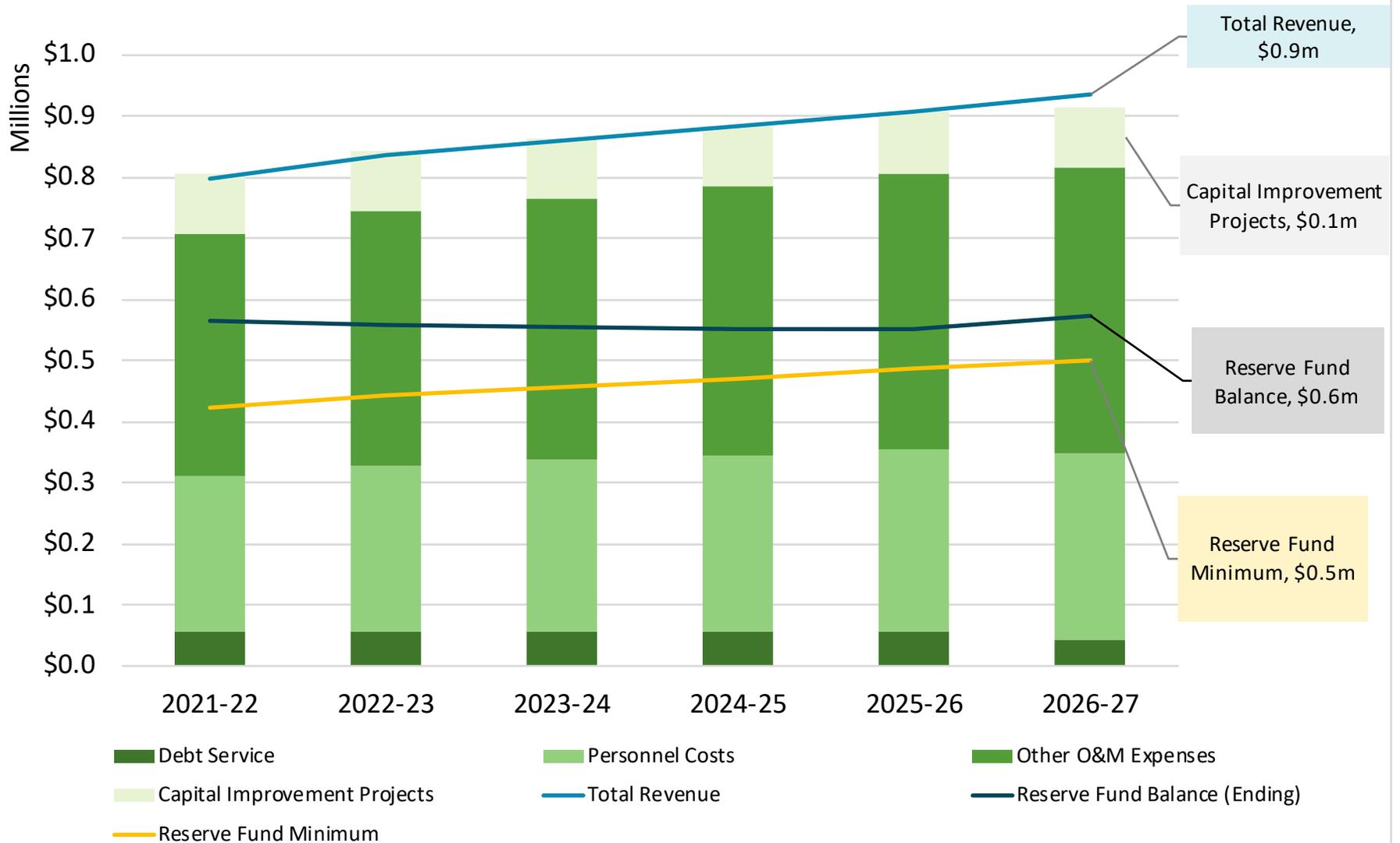


Table 9A: Original Cost Allocation - 89% Fixed, 11% Volumetric
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Proposed Wastewater Rate Summary

	% Fixed	% Variable	Budget 2021-22	\$ Fixed	\$ Variable
2022 EXPENDITURES - FIXED AND VARIABLE ALLOCATION					
Salaries and Benefits	90%	10%	\$395,022	\$355,520	\$39,502
Director Expenses - Meetings, Elections, Training	90%	10%	\$2,000	\$1,800	\$200
Operator Education, Training & Certifications	90%	10%	\$1,000	\$900	\$100
Gas, Diesel, Oil & Filters	80%	20%	\$3,000	\$2,400	\$600
Insurance	90%	10%	\$18,000	\$16,200	\$1,800
Memberships & Conferences	90%	10%	\$5,500	\$4,950	\$550
Office Expenses & Supplies	60%	40%	\$7,500	\$4,500	\$3,000
Field Expenses & Supplies	80%	20%	\$20,000	\$16,000	\$4,000
Grooming, Snow Removal & Vehicle Storage	80%	20%	\$3,500	\$2,800	\$700
General Engineering & Consulting	90%	10%	\$5,000	\$4,500	\$500
General Legal & Accounting	100%	0%	\$10,000	\$10,000	\$0
Equipment Rental	100%	0%	\$800	\$800	\$0
Repairs & Maintenance	80%	20%	\$60,000	\$48,000	\$12,000
Laboratory Fees	100%	0%	\$12,000	\$12,000	\$0
Regulatory Reporting & Compliance Projects	90%	10%	\$6,500	\$5,850	\$650
Taxes, Fees, Licenses & Assessments	90%	10%	\$45,000	\$40,500	\$4,500
Utilities	80%	20%	\$55,000	\$44,000	\$11,000
Total O&M Expenses	88%	12%	\$649,822	\$570,720	\$79,102
Debt Service	100%	0%	\$56,337	\$56,337	\$0
Capital Improvement Projects*	88%	12%	\$100,000	\$87,827	\$12,173
TOTAL EXPENDITURES			\$806,159	\$714,884	\$91,275
Proposed Fixed/Variable Cost Allocation				89%	11%

*CIP costs allocated using composite percentage, all O&M expenditures

Table 9B: Recommended Cost Allocation - 84% Fixed, 16% Volumetric
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Cost Allocation

	% Fixed	% Variable	Budget 2021-22	\$ Fixed	\$ Variable
2022 EXPENDITURES - FIXED AND VARIABLE ALLOCATION					
Salaries and Benefits	85%	15%	\$395,022	\$335,769	\$59,253
Director Expenses - Meetings, Elections, Training	85%	15%	\$2,000	\$1,700	\$300
Operator Education, Training & Certifications	85%	15%	\$1,000	\$850	\$150
Gas, Diesel, Oil & Filters	85%	15%	\$3,000	\$2,550	\$450
Insurance	85%	15%	\$18,000	\$15,300	\$2,700
Memberships & Conferences	85%	15%	\$5,500	\$4,675	\$825
Office Expenses & Supplies	60%	40%	\$7,500	\$4,500	\$3,000
Field Expenses & Supplies	85%	15%	\$20,000	\$17,000	\$3,000
Grooming, Snow Removal & Vehicle Storage	85%	15%	\$3,500	\$2,975	\$525
General Engineering & Consulting	85%	15%	\$5,000	\$4,250	\$750
General Legal & Accounting	90%	10%	\$10,000	\$9,000	\$1,000
Equipment Rental	85%	15%	\$800	\$680	\$120
Repairs & Maintenance	75%	25%	\$60,000	\$45,000	\$15,000
Laboratory Fees	80%	20%	\$12,000	\$9,600	\$2,400
Regulatory Reporting & Compliance Projects	80%	20%	\$6,500	\$5,200	\$1,300
Taxes, Fees, Licenses & Assessments	80%	20%	\$45,000	\$36,000	\$9,000
Utilities	75%	25%	\$55,000	\$41,250	\$13,750
Total O&M Expenses	83%	17%	\$649,822	\$536,299	\$113,523
Debt Service	100%	0%	\$56,337	\$56,337	\$0
Capital Improvement Projects*	83%	17%	\$100,000	\$82,530	\$17,470
TOTAL EXPENDITURES			\$806,159	\$675,166	\$130,993
Proposed Fixed/Variable Cost Allocation				84%	16%

*CIP costs allocated using composite percentage, all O&M expenditures

Table 10: Rate Calculation
 Bear Valley Water District
 Wastewater Cost of Service Rate Study 2022

Proposed Wastewater Rate Summary

	Source	FY 2021-22 Existing		FY 2022-23 (84% Fixed / 16% Volumetric)		FY 2022-23 (89% Fixed, 11% Volumetric)	
Total Rate Revenue Requirement	Table 7	\$780,000		\$826,800	+6%	\$826,800	+6%
Wastewater Demand - Gallons							
Residential	Table 2	9,313,587	80.9%	9,313,587	80.9%	9,313,587	84.7%
Commercial		2,205,882	19.1%	2,205,882	19.1%	1,676,471	15.3%
Total Demand		11,519,470		11,519,470		10,990,058	
Wastewater Demand - Users							
Residential	Table 2	549		549		549	84%
Commercial		101		101		101	16%
Total # Users		650		650		650	
Residential Rates (100% Fixed)							
Rate Revenue Requirement		\$630,000		\$672,832	80.9%	\$711,048	86%
# Residential Users	Table 2	549		549		549	
Residential Fixed Rate, \$/user/month		\$95.63		\$102.13		\$107.93	
Commercial Rates (Fixed Minimum + Volumetric)							
Rate Revenue Requirement		\$150,000		\$158,325	19.1%	\$115,752	14%
# Commercial Gallons	Table 2 **	2,205,882		2,205,882		1,676,471	
Commercial Rate \$/gal		\$0.068		\$0.072		\$0.069	
Commercial Minimum Charge, \$/user/month*		\$85.81		\$102.13		\$107.93	
Fixed + Minimum Rate Revenues		\$734,002	94%	\$796,614	96%	\$841,860	102%
Est. Volumetric Revenues		\$45,998	6%	\$30,186	4%	(\$15,060)	-2%
Total Estimated Rate Revenue		\$780,000		\$826,800		\$826,800	
% Change (from current)				+6%		+6%	

* 89% Fixed, 11% Volumetric rate option assumes reduction in commercial demand

**Proposed minimum charge for commercial users is equal to single family charge (1.9 ccf per month)

Table 11: Proposed Rate Summary
Bear Valley Water District
Wastewater Cost of Service Rate Study 2022

Proposed Wastewater Rate Summary

Projection	0	1	2	3	4	5
Fiscal Year	2021-22	2022-23	2023-24	2024-25	2025-26	2026-27
Adoption Date	Current	7/1/22	7/1/23	7/1/24	7/1/25	7/1/26
Proposed Rate Revenue Increase**		6.0%	3.0%	3.0%	3.0%	3.0%
Residential Rates						
Single Family, Multi Family	\$96.35	\$102.13	\$105.19	\$108.35	\$111.60	\$114.95
Non-Residential Rates						
Volumetric Rate	\$0.068	\$0.072	\$0.074	\$0.076	\$0.078	\$0.081
Minimum Charge	\$85.81	\$102.13	\$105.19	\$108.35	\$111.60	\$114.95

** First year rate increase is a cost-of-service based adjustment - further rate increases to be determined on an annual basis by the District Board according to the change in Consumer Price Index (estimated 3%)