



City of Bishop
Water and Sewer Rate Study
for
July 2019 through June 2024
Prepared September 2018

Background

The City of Bishop Department of Public Works provides water and sewer service to customers within the city limits and, in a few cases, to customers outside the city. The city is obligated to set water and sewer fees at a level to recover the costs related to providing these services.

The financial funds for the City of Bishop water and sewer programs are “enterprise funds”. In this case this means the fees collected from water and sewer customers can only go to the support of those water and sewer programs, not for any other purposes such as costs normally covered by the city general fund.

The basic process of developing a water and sewer rate study is, first, to forecast the costs of providing the services and then, second, to distribute those costs to customers in an equitable manner through water and sewer fees.

The City of Bishop uses a flat rate system for water and sewer fees. In the city’s system, customers are broken down into about 20 categories. The fee for each category is related through a ratio or factor to what a single family residence pays. For the purpose of rate studies, single family residences are called Equivalent Dwelling Units (EDU’s).

Since 2009 the city has used a 5 year update cycle for water and sewer rates. The most recent study was done in 2013 and was the basis of rates for the 2014-2015 through 2018-2019 fiscal years. Circumstances that impact the cost of operating the water and sewer systems change continuously, so the cost forecasts used in setting rates are reviewed and updated periodically.

The ratio established for each customer category that relates what that category pays for water and sewer services to a single family residence is called an EDU factor. EDU factors are important because they have the greatest real and perceived impact on the equity of what various customers pay for the services they receive. It appears that the EDU factors used by the city were established decades ago, possibly in the early 1980’s.

Even though existing customer categories and EDU factors have served the city for a long time, in some circumstances minor modifications to EDU factors or customer categories have been justified. The most recent rate study done in 2013 adjusted EDU factors of a few customer categories based on observed water use in those categories and on the best information available on the characteristics of wastewater from different

types of customers available at the time. In general as part of that study there was a small general shift of financial burden from commercial to residential customers. The 2013 study is available on the city internet site.

The last 3 water and sewer rate studies were done by consultant with city staff providing source information including cost forecasts, document review, and other support. Consultants provide expertise that city staff may not be able to, provide real and perceived objectivity to the process that city staff may not be able to provide, and can insulate city staff, City Council, and the Water and Sewer Commission from controversy related to the study.

Because city staff has developed most of the information presented in past studies, because a rate review for the 2019-2020 through 2023-2024 is anticipated to be relatively simple, and because limited controversy is anticipated for the next rate review, it is anticipated that a rate study prepared entirely by city staff and reviewed by the Water and Sewer Commission will be adequate for the current study.

Generally speaking, rate recommendations in rate studies are considered by the Water and Sewer Commission and then the Commission makes its own rate recommendations to the City Council typically based on the study. The City Council then considers Commission recommendations and establishes rates or fees to be used in the required Proposition 218 process. In simple terms, the Proposition 218 process requires notice of proposed rates to property owners and requires a hearing where property owners can protest proposed rates. At the completion of the Proposition 218 process, the City Council sets water and sewer rates to be used over the following 5 year period.

Study Process

Staff in the City of Bishop Department of Public Works developed the recommended rates as follows:

1. Developed short term forecast costs of providing water and sewer services to city customers.
2. Developed factors used to escalate short term costs over the 5-year period of study to account for inflation.
3. Made minor modifications to customer user categories to improve equity.
4. Calculated theoretical water and sewer rates for each customer category based on forecast costs.
5. Established single family residence water and sewer rates at even dollar values that approximate theoretical rates.

Cost Forecasts

General: Costs forecasts were broken in to 4 categories: Salaries and Benefits, Service and Supplies, Capital Equipment, and Capital Improvements.

Most costs are shared between water, sewer, and other programs including General Fund programs. Because of this, most shared costs, including personnel costs, are distributed between programs based on appropriate percentages.

Distribution Percentages: Distribution percentages are applied to most expenses related to water and sewer. For instance, if some item is used one half time on water, one quarter time on sewer, the cost of that item would be distributed 50% water, 25% sewer, and 25% other. Distribution percentages are applied to expenses shared between programs and these percentages have a significant impact on forecast costs for each program and, therefore, water and sewer rates.

Distribution percentages need to reflect how resources are spent between programs as accurately as possible and spending has changed since the time of the last rate study. As a result, updated distribution percentages need to be established as part of this rate study.

The last rate study done in 2013 was done when the economy was coming out of a significant recession. During the recession, General Fund revenues were lower. Since General Funds were lower, there were less resources spent on General Fund activities and so the distribution percentages were set to reflect more being spent on water and sewer and less spent on other programs, particularly the General Fund.

In years since the last rate study was completed, the economy has improved and General Fund revenues have increased. The increased revenues have made it possible to again spend more shared resources on General Fund and other non-water-and-sewer programs. The distribution percentages need to be updated to reflect this.

In addition to more being spent on non-water-and-sewer programs, there has also been a shift of expenditures between water and sewer since the last rate study. For instance, in the last few years much more has been spent improving the wastewater treatment and effluent disposal processes than had in the past. Most of the increase has been related to protecting the quality of groundwater in the area of the wastewater treatment plant. This increase in effort on the sewer system is expected to continue.

While sewer costs have increased, significant improvements made to the water system has resulted on less being spent on water than in the past. This reduced expenditure level on water is expected to continue. The distribution percentages need to be updated to reflect these changes in expenditure.

How distribution percentages are applied to each employee and each expense is complex. To simplify for the purposes of the rate study almost all shared cost were assumed to be distributed in the same way and using the same percentages.

Currently – and as things were left after the recession – shared expenditures are split about 37% water, 41% sewer, and 22% other (mostly General Fund). How staff spends its time is believed to be close representation of how all costs are being expended and,

looking at 2015 through 2017, staff spend about 25% of its time on water, 35% on sewer, and 40% on other.

These 25, 35, and 40 percentages are the best representation of what the distribution percentages would be if they were to reflect current practices. On the other hand, using these percentages would have a significant negative impact on the General Fund. That impact would reduce the amount of General Fund money available. That reduction in money available would mean less work would be done. That reduction in work would suggest a lesser shift in percentages toward the General Fund than the 25, 35, and 40 percentages.

The 25, 35, and 40 percentages provide ratios between water, sewer, and other programs of 5:7:8. The 5:7 ratio between water and sewer was considered important in forecasting costs in this current rate study and that approximate ratio between water and sewer percentages is to be held constant even as varying percentages are considered. For instance, for the purposes of forecasting costs and estimating rates, the total 78% that is currently charged to water and sewer could be split 33% water and 45% sewer, about a 5:7 ratio. This 5:7 ratio represents a fairly large shift of costs from water to sewer and results in lower water rates and higher sewer rates.

For the purposes of this study, distribution percentages of 30% water, 40% sewer, and 30% General Fund are used. It is assumed these percentages would be applied to actual expenses during the life of this study.

Summary of Forecast Costs: Costs per year are forecast to be:

Category	Water		Sewer	
Salaries and Benefits	\$ 491,983.65	46%	\$ 639,859.53	48%
Service and Supplies	\$ 266,796.35	25%	\$ 234,876.26	18%
Subtotal	\$ 758,779.99	70%	\$ 874,735.79	66%
Capital Equipment	\$ 22,165.00	2%	\$ 37,528.00	3%
Capital Improvements	\$ 298,362.71	28%	\$ 415,392.08	31%
Subtotal	\$ 320,527.71	30%	\$ 452,920.41	34%
Total	\$ 1,079,307.70		\$ 1,327,656.20	

Descriptions of the methods used to develop these costs are provided below and on attached calculation sheets. Costs are in July 2019 dollars.

Salaries and Benefits: Salaries and benefits are estimated based on costs used in city budgeting processes. It is assumed that staffing levels stay as they are currently. Employees receive a fraction of the cost of salaries and benefits in the “Yearly” column on the salaries and benefits calculation sheet, Attachment 1.

The yearly costs are distributed to the water and sewer programs based on the distribution percentages established for this rate study. The exception to this is for “Part Time / Commission” which is the Water and Sewer Commission and that is distributed 50% to water and sewer.

In addition to the employee-dependent costs, there are 4 other types of costs that contribute to total salaries and benefits costs and those are added for the total based on costs used for budgeting purposes.

Service and Supplies: Service and supplies costs are estimated separately for water and for sewer based on 5 years of past expenditures. The estimates break costs into the various categories in the city financial system. The average expenditures are modified for known changes such as the addition of the “City Cost Plan”, reduction in energy costs due to the solar project completed in 2016, the elimination of loan payments for the water system, and for proposed changes of distribution percentages applied to some categories. Calculation sheets for services and supplies for water and sewer are Attachments 2 and 3.

Capital Equipment: Equipment expenditures are estimated based on the equipment needed to complete Public Works functions, replacement costs, and expected life of each piece of equipment. The idea is rates should generate enough money to replace equipment even if the estimated amount is not expended each year and instead is accumulated until needed for a purchase. For example, \$1,000 should be generated each year for a \$10,000 piece of equipment expected to last 10 years. In addition, 10% is added for enhancements to equipment. The funds for enhancements is intended to take advantage of new technologies and to respond to new requirements such as emission requirements. Most equipment costs are distributed based on the distribution percentages. The calculation sheet for capital equipment is Attachment 4.

Capital Improvements: Capital improvements are estimated for each of water and sewer in way similar to equipment. The value of each major asset is estimated along with its life. From this, the annual cost is calculated. To the resulting accumulated total, 15% is added for system enhancements to take advantage of new technologies and to meet new regulatory requirements. Calculation sheets for Capital Improvements for water and sewer are Attachments 5 and 6.

Escalation Factors

Things that deal with money over time need to account for the way costs tend to change over time and the nature of the money tends to increase costs over time. For the purposes of this study, costs are assumed to escalate at the annual rate of inflation.

Anticipated inflation rates for construction industry are the most appropriate for this rate study. Average inflation for construction costs is projected to range from about 2% to about 3% over the 2019 to 2024 period that is covered by this study. For the purposes of this study, costs are assumed to escalate at 2.25% per year.

An escalation rate of 2% compounded for 5 years results in about a 10.4% cumulative increase over 5 years. An escalation rate of 3% compounded for 5 years results in about 15.9% cumulative increase. An escalation rate of 2.25% compounded for 5 years results in about an 11.8% increase over the life of the rate study.

Changes to Customer Categories

The City of Bishop Water and Sewer Commission and city staff have recommended 2 changes to customer categories. Both are additions affecting restaurant customers.

The city has a long standing practice of not charging per seat for rooms at restaurants that are closed to customers except during special events. For the purposes of water and sewer fees these rooms are called banquet rooms and they are charged 0.95 EDU per room. To better document this practice, a Banquet Room category is added with fees set at 0.95 EDU per room.

Restaurants are currently charged the same for outside seating as indoor seating even though outdoor seating is not used throughout the year. As a result of past consideration the Water and Sewer Commission recommended establishing a category for outdoor seats and setting the water and sewer fees for the new category at 50% of indoor seats or 0.05 EDU per seat.

Theoretical Rates

Theoretical rates can be calculated by dividing the forecast costs by the number of EDU's for each system. Based on the customer information available in early July 2018, and with the proposed changes to customer categories, EDU's for the entire water and sewer systems are calculated as shown on Attachment 7.

Theoretical rates for single family residences based on 2.25% annual escalation would be:

	Current	July 2019	July 2020	July 2021	July 2022	July 2023
Water	\$37.00	\$30.90	\$31.60	\$32.31	\$33.03	\$33.78
Sewer	\$32.00	\$38.10	\$38.96	\$39.83	\$40.73	\$41.65
Total	\$69.00	\$69.00	\$70.55	\$72.14	\$73.76	\$75.42

Recommended Rates

To simplify rates to reduce clerical errors, the following rates are recommended for single family residences:

	Current	July 2019	July 2020	July 2021	July 2022	July 2023
Water	\$37.00	\$31.00	\$32.00	\$32.00	\$33.00	\$33.00
Sewer	\$32.00	\$38.00	\$39.00	\$40.00	\$41.00	\$42.00
Total	\$69.00	\$69.00	\$71.00	\$72.00	\$74.00	\$75.00

These recommended rates for single family residences applied to the recommended customer categories would result in the water and sewer fees shown on Attachment 8.

Prepared By



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City of Bishop Director of Public Works

5 September 2018

Date

City of Bishop
Salaries and Benefits Calculation Sheet
September 2018 Water and Sewer Rate Study

Attachment 1

Employee	Yearly	Water %	Water	Sewer %	Sewer
Director	\$ 251,196.93	30%	\$ 75,359.08	40%	\$ 100,478.77
Superintendent	\$ 215,070.00	30%	\$ 64,521.00	40%	\$ 86,028.00
Supervisor	\$ 202,556.91	30%	\$ 60,767.07	40%	\$ 81,022.76
Worker	\$ 156,429.89	30%	\$ 46,928.97	40%	\$ 62,571.96
Worker	\$ 153,776.29	30%	\$ 46,132.89	40%	\$ 61,510.52
Worker	\$ 153,465.60	30%	\$ 46,039.68	40%	\$ 61,386.24
Worker	\$ 125,709.76	30%	\$ 37,712.93	40%	\$ 50,283.90
Worker	\$ 80,026.88	30%	\$ 24,008.06	40%	\$ 32,010.75
Secretary	\$ 140,526.58	30%	\$ 42,157.97	40%	\$ 56,210.63
Part Time / Commission	\$ 10,712.00	50%	\$ 5,356.00	50%	\$ 5,356.00
Subtotal	\$ 1,489,470.83		\$ 448,983.65		\$ 596,859.53
Adjustments					
Retiree Health			\$ 30,000.00		\$ 30,000.00
Leave Payouts			\$ 3,500.00		\$ 3,500.00
Overtime			\$ 3,000.00		\$ 3,000.00
Duty Time			\$ 6,500.00		\$ 6,500.00
Total			\$ 491,983.65		\$ 639,859.53

City of Bishop
Water Services and Supplies Calculation Sheet
September 2018 Water and Sewer Rate Study

	Description	2013/2014	2014/2015	2015/2016	2016/2017	Average	% factor	Factored	Use
52009	Training	\$ 399.00	\$ 352.80	\$ 1,635.68	\$ 2,067.25	\$ 1,113.68		\$ 1,113.68	\$ 1,200.00
52010	Heat, Light, Power	\$ 56,278.03	\$ 58,010.25	\$ 42,853.18	\$ 29,862.92	\$ 46,751.10		\$ 46,751.10	\$ 30,000.00
52011	Advertising/Printing	\$ 189.66	\$ 50.32	\$ 8.62	\$ 103.75	\$ 88.09		\$ 88.09	\$ 100.00
52012	Office Supplies	\$ 3,807.61	\$ 2,990.43	\$ 2,389.98	\$ 3,233.77	\$ 3,105.45	0.81	\$ 2,517.93	\$ 2,600.00
52013	Communications	\$ 1,708.94	\$ 1,933.13	\$ 2,387.80	\$ 2,835.44	\$ 2,216.33	0.81	\$ 1,797.02	\$ 1,800.00
52014	Travel	\$ 916.31	\$ -	\$ 42.84	\$ 2,369.97	\$ 832.28		\$ 832.28	\$ 1,000.00
52015	Professional Services OVGA	\$ 22,268.05	\$ 22,035.92	\$ 23,819.36	\$ 29,857.67	\$ 24,495.25		\$ 24,495.25	\$ 30,000.00
52017	Waste Fees	\$ 1,168.62	\$ 719.09	\$ 564.77	\$ 718.71	\$ 792.80		\$ 792.80	\$ 1,500.00
52018	Special Department Supplies	\$ 36,713.36	\$ 31,659.00	\$ 36,259.22	\$ 32,784.75	\$ 34,354.08	0.81	\$ 27,854.66	\$ 30,000.00
52019	Subscriptions	\$ 798.80	\$ 602.50	\$ 973.10	\$ 1,357.40	\$ 932.95	0.81	\$ 756.45	\$ 1,000.00
52020	Water Incentive Program	\$ 2,206.73	\$ 3,118.30	\$ 1,650.00	\$ 550.00	\$ 1,881.26		\$ 1,881.26	\$ 2,000.00
52024	Taxes	\$ -	\$ 76.72	\$ 77.74	\$ 77.80	\$ 58.07		\$ 58.07	\$ 100.00
52045	IT	\$ -	\$ 3,060.41	\$ 9,071.05	\$ 10,518.36	\$ 5,662.46		\$ 5,662.46	\$ 12,000.00
53020	Vehicle Operations	\$ 11,476.72	\$ 7,889.90	\$ 10,420.19	\$ 11,035.92	\$ 10,205.68	0.81	\$ 8,274.88	\$ 10,000.00
53022	Office Equipment	\$ 2,126.94	\$ 1,606.89	\$ 1,483.34	\$ 1,489.50	\$ 1,676.67	0.81	\$ 1,359.46	\$ 1,500.00
54023	Building Operations	\$ -	\$ -	\$ -	\$ -	\$ -		\$ -	
55023	Small Claims	\$ 1,920.00	\$ -	\$ -	\$ -	\$ 480.00		\$ 480.00	\$ 500.00
55024	Rentals/Refunds	\$ 2,450.00	\$ 3,063.80	\$ 2,416.99	\$ 1,757.71	\$ 2,422.13		\$ 2,422.13	\$ 2,500.00
55100	City Cost Plan		\$ 79,565.00	\$ 93,259.00	\$ 90,619.00	\$ 87,814.33		\$ 87,814.33	\$ 92,000.00
56030	Loan Payment	\$ 41,942.09	\$ 41,933.99	\$ 41,920.00	\$ 41,858.96	\$ 41,913.76		\$ 41,913.76	\$ -
	Total	\$ 186,370.86	\$ 258,668.45	\$ 271,232.86	\$ 263,098.88	\$ 266,796.35		\$ 256,865.59	\$ 219,800.00

City of Bishop
Sewer Services and Supplies Calculation Sheet
September 2018 Water and Sewer Rate Study

	Description	2013/2014	2014/2015	2015/2016	2016/2017	Average	% factor	Factored	Use
52009	Training	\$ 1,194.00	\$ 752.80	\$ 1,571.00	\$ 1,202.25	\$ 1,180.01		\$ 1,180.01	\$ 1,200.00
52010	Heat, Light, Power	\$ 38,901.60	\$ 33,964.28	\$ 22,317.47	\$ 16,473.08	\$ 27,914.11		\$ 27,914.11	\$ 18,000.00
52011	Advertising/Printing	\$ 189.66	\$ 142.79	\$ 57.57	\$ 43.10	\$ 108.28		\$ 108.28	\$ 150.00
52012	Office Supplies	\$ 3,640.34	\$ 3,494.46	\$ 2,761.43	\$ 3,736.35	\$ 3,408.15	0.73	\$ 2,493.76	\$ 2,500.00
52013	Communications	\$ 1,729.97	\$ 1,910.66	\$ 2,181.21	\$ 2,392.79	\$ 2,053.66	0.73	\$ 1,502.68	\$ 1,500.00
52014	Travel	\$ 916.31	\$ -	\$ 597.73	\$ 1,519.80	\$ 758.46		\$ 758.46	\$ 1,000.00
52015	Professional Services	\$ 72,446.28	\$ 31,078.68	\$ 35,191.18	\$ 50,254.59	\$ 47,242.68		\$ 47,242.68	\$ 50,000.00
52017	Waste Fees	\$ 1,729.61	\$ 3,210.18	\$ 2,739.28	\$ 2,852.63	\$ 2,632.93		\$ 2,632.93	\$ 3,000.00
52018	Special Department Supplies	\$ 23,460.33	\$ 17,490.21	\$ 20,305.99	\$ 32,336.10	\$ 23,398.16	0.73	\$ 17,120.60	\$ 20,000.00
52019	Subscriptions	\$ 678.80	\$ 482.50	\$ 853.10	\$ 1,237.40	\$ 812.95	0.73	\$ 594.84	\$ 1,000.00
52024	Taxes		\$ 572.56	\$ 574.72	\$ 580.34	\$ 575.87		\$ 575.87	\$ 600.00
52045	IT		\$ 3,030.41	\$ 9,113.90	\$ 10,485.02	\$ 7,543.11		\$ 7,543.11	\$ 12,000.00
53020	Vehicle Operations	\$ 15,077.40	\$ 9,826.26	\$ 12,427.69	\$ 19,926.67	\$ 14,314.51	0.73	\$ 10,474.03	\$ 12,000.00
53021	Special Equipment Operation	\$ 8,886.22	\$ 2,171.01	\$ 14,712.30		\$ 8,589.84		\$ 8,589.84	\$ -
53022	Office Equipment	\$ 2,140.17	\$ 1,614.28	\$ 1,483.35	\$ 1,489.50	\$ 1,681.83	0.73	\$ 1,230.60	\$ 1,500.00
55023	Small Claims	\$ 1,415.76	\$ -	\$ -	\$ -	\$ 353.94		\$ 353.94	\$ 500.00
55024	Rentals	\$ -	\$ -	\$ -	\$ 185.80	\$ 46.45		\$ 46.45	\$ 100.00
55100	City Cost Plan		\$ 88,055.00	\$ 93,100.00	\$ 95,629.00	\$ 92,261.33		\$ 92,261.33	\$ 95,000.00
		\$ 172,406.45	\$ 197,796.08	\$ 219,987.92	\$ 240,344.42	\$ 234,876.26		\$ 222,623.53	\$ 220,050.00

City of Bishop
 Capital Equipment Calculation Sheet
 September 2018 Water and Sewer Rate Study

Attachment 4

EQUIPMENT	REPLACE	LIFE	ANNUAL	WATER		SEWER	
	VALUE			%	\$	%	\$
916 Cat Loader	\$130,000	20	\$6,500	30%	\$1,950	40%	\$2,600
Backhoe	\$110,000	20	\$5,500	30%	\$1,650	40%	\$2,200
Dump truck / Plow Truck	\$120,000	20	\$6,000	30%	\$1,800	40%	\$2,400
Dump truck / Plow Truck	\$120,000	20	\$6,000	30%	\$1,800	40%	\$2,400
Dump truck / Plow Truck	\$120,000	20	\$6,000	30%	\$1,800	40%	\$2,400
300 kW Portable Generator	\$80,000	25	\$3,200	30%	\$960	40%	\$1,280
Flatbed Pickup	\$45,000	15	\$3,000	30%	\$900	40%	\$1,200
Flatbed Pickup	\$45,000	15	\$3,000	30%	\$900	40%	\$1,200
Flatbed Pickup	\$45,000	15	\$3,000	30%	\$900	40%	\$1,200
Utility Truck	\$45,000	15	\$3,000	30%	\$900	40%	\$1,200
Supervisors Truck	\$35,000	15	\$2,333	30%	\$700	40%	\$933
Superintendents Truck	\$35,000	15	\$2,333	30%	\$700	40%	\$933
Sewer Cleaning Truck	\$322,000	20	\$16,100	30%	\$4,830	40%	\$6,440
Sewer Camera 1/2 share	\$72,500	10	\$7,250	0%	\$0	100%	\$7,250
Air Compressor	\$20,000	25	\$800	30%	\$240	40%	\$320
Trash Pump	\$10,000	25	\$400	30%	\$120	40%	\$160
Replacement Totals	\$1,354,500		\$74,417		\$20,150		\$34,117
Enhancements	10%		\$7,442		\$2,015		\$3,412
Total Capital Equipment			\$81,858		\$22,165		\$37,528

City of Bishop
Water Capital Improvements Calculation Sheet
September 2018 Water and Sewer Rate Study

Attachment 5

					Years Life	Annual Cost
					% per Year	
Pipes		Cost per inch per foot	\$	12.50		
		Diameter		Length		Installed
		2		675		\$ 67,500.00
		4		15,814		\$ 1,581,400.00
		6		11,532		\$ 1,153,200.00
		8		42,872		\$ 4,287,200.00
		10		15,787		\$ 1,973,375.00
		12		26,315		\$ 3,947,250.00
		14		2,143		\$ 375,025.00
		20		350		\$ 87,500.00
					100	
						\$ 134,724.50
					1.00%	\$ 134,724.50
Valves						
	Diameter	Count	Cost	Installed		
	2	0	\$ 250.00	\$ -		
	4	38	\$ 500.00	\$ 38,000.00		
	6	189	\$ 650.00	\$ 245,700.00		
	8	199	\$ 1,100.00	\$ 437,800.00		
	10	63	\$ 1,650.00	\$ 207,900.00		
	12	41	\$ 2,000.00	\$ 164,000.00		
	14	8	\$ 6,200.00	\$ 99,200.00		
	20	1	\$ 13,000.00	\$ 26,000.00	75	
						\$ 16,248.00
					1.33%	\$ 16,248.00
Hydrants						
		Count	Cost	Installed	50	
		207	\$ 4,500	\$ 931,500.00	2.00%	\$ 18,630.00
Wells						
		Count	Cost	Installed	50	
		3	\$ 1,000,000	\$ 3,000,000.00	2.00%	\$ 60,000.00
Storage Tank						
		Count	Cost	Installed	75	
		1	\$ 1,500,000	\$ 1,500,000.00	1.33%	\$ 20,000.00
Control Tank						
		Count	Cost	Installed	75	
		1	\$ 400,000	\$ 400,000.00	1.33%	\$ 5,333.33
Chlorination						
		Count	Cost	Installed	10	
		1	\$ 2,500	\$ 2,500.00	10.00%	\$ 250.00
Sample Stations						
		Count	Cost	Installed	25	

City of Bishop
 Water Capital Improvements Calculation Sheet
 September 2018 Water and Sewer Rate Study

Attachment 5

		4	\$ 6,000	\$ 24,000.00	4.00%	\$ 960.00
Buildings						
	Per Sq foot	Area	Sewer Share	Cost		
Shop	\$200	3750	33%	\$ 247,500.00	75	
				\$ 247,500.00	1.33%	\$ 3,300.00
		Total Existing Water System		\$ 19,296,550.00		\$ 259,445.83
		Water System Enhancement		15%		\$ 38,916.88
	Total Annual Capital Improvement Cost					\$ 298,362.71

City of Bishop
Sewer Capital Improvements Calculation Sheet
September 2018 Water and Sewer Rate Study

					Years Life	Annual Cost
					% per Year	
Pipes	Cost per inch per foot			\$ 12.50		
	Diameter	Length	Installed			
	4	163	\$ 16,300.00			
	6	44,635	\$ 4,463,500.00			
	8	22,125	\$ 2,212,500.00			
	10	5,761	\$ 720,125.00			
	12	6,638	\$ 995,700.00			
	14	672	\$ 117,600.00			
	15	3,371	\$ 632,062.50			
	18	2,007	\$ 451,575.00			
	21	1,035	\$ 271,687.50	100		
			\$ 9,881,050.00	1.00%	\$ 98,810.50	
Manholes						
	Count	Cost	Installed	100		
	290	\$ 4,000	\$ 1,160,000.00	1.00%	\$ 11,600.00	
Lift Stations						
	Count	Cost	Installed	25		
	1	\$ 250,000	\$ 250,000.00	4.00%	\$ 10,000.00	
Plant						
	Feature	Count	Cost	Installed		
	headworks	1	\$ 375,000	\$ 375,000		
	clarifier	2	\$ 750,000	\$ 1,500,000		
	digesters	2	\$ 2,000,000	\$ 4,000,000		
	ponds	6	\$ 750,000	\$ 4,500,000		
	disposal	1	\$ 1,500,000	\$ 1,500,000	50	
			\$ 11,875,000	2.00%	\$ 237,500.00	
Buildings						
	Per Sq foot	Area	Sewer Share	Cost		
Shop	\$200	3750	33%	\$ 247,500.00	75	
				\$ 247,500.00	1.33%	\$ 3,300.00
	Total Existing Sewer System			\$ 23,413,550.00		\$ 361,210.50
	Sewer System Enhancement			15%		\$ 54,181.58
Total Annual Capital Improvement Cost						\$ 415,392.08

City of Bishop
 Equivalent Dwelling Unit Calculations
 September 2018 Water and Sewer Rate Study

Customer Category	Unit	Existing					Proposed				
		EDU Factor		Count	EDU Totals		EDU Factor		Count	EDU Totals	
		Water	Sewer		Water	Sewer	Water	Sewer		Water	Sewer
Single Family Residence	Each	1.00		551	551.0	551.0	1.00		551	551.0	551.0
Multiple Family Residence (detached)	Unit	0.75		694	520.5	520.5	0.75		694	520.5	520.5
Multiple Family Residence (attached)	Unit	0.70		671	469.7	469.7	0.70		671	469.7	469.7
Church	Each	1.00		16	16.0	16.0	1.00		16	16.0	16.0
Hall	Each	1.00		12	12.0	12.0	1.00		12	12.0	12.0
Hospital	Bed	0.35		212	74.2	74.2	0.35		212	74.2	74.2
School	Student	0.04		2013	80.5	80.5	0.04		2013	80.5	80.5
Fairgrounds	Each	5.00	7.00	1	5.0	7.0	5.00	7.00	1	5.0	7.0
Gas Station	Island	0.40		39	15.6	15.6	0.40		39	15.6	15.6
Car Wash	Stall	3.00		12	36.0	36.0	3.00		12	36.0	36.0
Beauty or Barber Shop	Each	1.00		21	21.0	21.0	1.00		21	21.0	21.0
Restaurant	Seat	0.10		2424	242.4	242.4	0.10		2035	203.5	203.5
Restaurant Outside	Seat			0	0.0	0.0	0.05		310	15.5	15.5
Restaurant Banquet Room	Each			0	0.0	0.0	0.95		9	8.6	8.6
Bar	Seat	0.08		391	31.3	31.3	0.08		276	22.1	22.1
Hotel Room	Each	0.25		866	216.5	216.5	0.25		866	216.5	216.5
Laundry and Laundromat	Washer	0.70		59	41.3	41.3	0.70		59	41.3	41.3
Trailer Dump Facility	Each	2.00		2	4.0	4.0	2.00		2	4.0	4.0
General Commercial	Toilet	0.95		628	596.6	596.6	0.95		619	588.1	588.1
Brewery (with pretreatment)	1KBbl/Yr	0.20		1	0.2	0.2	0.20		1	0.2	0.2
Irrigation	Acre	0.30	0.00	29	8.7	0.0	0.30	0.00	29	8.7	0.0
Other	Case by case	0.00		0	0.0	0.0	0.00		0	0.0	0.0
Totals					2942.5	2935.8				2909.9	2903.2

City of Bishop
 Summary of Estimated Water and Sewer Expenditures
 September 2018 Rate Review

Recommended Water Fees:

User Category	Basis	Monthly Fee					
		Current	Proposed				
		July 2018	July 2019	July 2020	July 2021	July 2022	July 2023
Single Family Residence	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Multiple Family Residence (detached)	Unit	\$ 27.75	\$ 23.25	\$ 24.00	\$ 24.00	\$ 24.75	\$ 24.75
Multiple Family Residence (attached)	Unit	\$ 25.90	\$ 21.70	\$ 22.40	\$ 22.40	\$ 23.10	\$ 23.10
Church	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Hall	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Hospital	Bed	\$ 12.95	\$ 10.85	\$ 11.20	\$ 11.20	\$ 11.55	\$ 11.55
School	Student	\$ 1.48	\$ 1.24	\$ 1.28	\$ 1.28	\$ 1.32	\$ 1.32
Fairgrounds	Each	\$ 185.00	\$ 155.00	\$ 160.00	\$ 160.00	\$ 165.00	\$ 165.00
Gas Station	Island	\$ 14.80	\$ 12.40	\$ 12.80	\$ 12.80	\$ 13.20	\$ 13.20
Car Wash	Stall	\$ 111.00	\$ 93.00	\$ 96.00	\$ 96.00	\$ 99.00	\$ 99.00
Beauty or Barber Shop	Each	\$ 37.00	\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Restaurant	Seat	\$ 3.70	\$ 3.10	\$ 3.20	\$ 3.20	\$ 3.30	\$ 3.30
Restaurant Outside	Seat		\$ 1.55	\$ 1.60	\$ 1.60	\$ 1.65	\$ 1.65
Restaurant Banquet Room	Each		\$ 31.00	\$ 32.00	\$ 32.00	\$ 33.00	\$ 33.00
Bar	Seat	\$ 2.96	\$ 2.48	\$ 2.56	\$ 2.56	\$ 2.64	\$ 2.64
Hotel Room	Each	\$ 9.25	\$ 7.75	\$ 8.00	\$ 8.00	\$ 8.25	\$ 8.25
Laundry and Laundromat	Washer	\$ 25.90	\$ 21.70	\$ 22.40	\$ 22.40	\$ 23.10	\$ 23.10
Trailer Dump Facility	Each	\$ 74.00	\$ 62.00	\$ 64.00	\$ 64.00	\$ 66.00	\$ 66.00
General Commercial	Toilet	\$ 35.15	\$ 29.45	\$ 30.40	\$ 30.40	\$ 31.35	\$ 31.35
Brewery (with pretreatment)	1KBbl/Yr	\$ 7.40	\$ 6.20	\$ 6.40	\$ 6.40	\$ 6.60	\$ 6.60
Irrigation	Acre	\$ 11.10	\$ 9.30	\$ 9.60	\$ 9.60	\$ 9.90	\$ 9.90
Other	Case by case	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -

Recommended Sewer Fees:

		Monthly Fee					
		Current	Proposed				
		July 2018	July 2019	July 2020	July 2021	July 2022	July 2023
Single Family Residence	Each	\$ 32.00	\$ 38.00	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00
Multiple Family Residence (detached)	Unit	\$ 24.00	\$ 28.50	\$ 29.25	\$ 30.00	\$ 30.75	\$ 31.50
Multiple Family Residence (attached)	Unit	\$ 22.40	\$ 26.60	\$ 27.30	\$ 28.00	\$ 28.70	\$ 29.40
Church	Each	\$ 32.00	\$ 38.00	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00
Hall	Each	\$ 32.00	\$ 38.00	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00
Hospital	Bed	\$ 11.20	\$ 13.30	\$ 13.65	\$ 14.00	\$ 14.35	\$ 14.70
School	Student	\$ 1.28	\$ 1.52	\$ 1.56	\$ 1.60	\$ 1.64	\$ 1.68
Fairgrounds	Each	\$ 224.00	\$ 266.00	\$ 273.00	\$ 280.00	\$ 287.00	\$ 294.00
Gas Station	Island	\$ 12.80	\$ 15.20	\$ 15.60	\$ 16.00	\$ 16.40	\$ 16.80
Car Wash	Stall	\$ 96.00	\$ 114.00	\$ 117.00	\$ 120.00	\$ 123.00	\$ 126.00
Beauty or Barber Shop	Each	\$ 32.00	\$ 38.00	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00
Restaurant	Seat	\$ 3.20	\$ 3.80	\$ 3.90	\$ 4.00	\$ 4.10	\$ 4.20
Restaurant Outside	Seat		\$ 1.90	\$ 1.95	\$ 2.00	\$ 2.05	\$ 2.10
Restaurant Banquet Room	Each		\$ 38.00	\$ 39.00	\$ 40.00	\$ 41.00	\$ 42.00
Bar	Seat	\$ 2.56	\$ 3.04	\$ 3.12	\$ 3.20	\$ 3.28	\$ 3.36
Hotel Room	Each	\$ 8.00	\$ 9.50	\$ 9.75	\$ 10.00	\$ 10.25	\$ 10.50
Laundry and Laundromat	Washer	\$ 22.40	\$ 26.60	\$ 27.30	\$ 28.00	\$ 28.70	\$ 29.40
Trailer Dump Facility	Each	\$ 64.00	\$ 76.00	\$ 78.00	\$ 80.00	\$ 82.00	\$ 84.00
General Commercial	Toilet	\$ 30.40	\$ 36.10	\$ 37.05	\$ 38.00	\$ 38.95	\$ 39.90
Brewery (with pretreatment)	1KBbl/Yr	\$ 6.40	\$ 7.60	\$ 7.80	\$ 8.00	\$ 8.20	\$ 8.40
Irrigation	Acre	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
Other	Case by case	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -