CITY OF JOPLIN
COUNCIL AGENDA ITEM

ITEM
Council Bill 2019-161: New Rate Structure for Joplin Sewer Utilities.

MEETING DATE
December 2, 2019

ORIGINATING DEPARTMENT
Public Works - Operations

REVIEWED BY
Director of Public Works -David Hertzberg; Director of Finance - Leslie Haase; City Attorney -Peter Edwards; Interim City Manager - Daniel Pekarek

ATTACHMENTS
Council Bill No. 2019-161; Joplin MO Sewer Rate Study and Structure for Joplin Sewer Utilities.

SUMMARY
Approval of a New Rate Structure for all customers inside and outside the city limits for sewer utilities per guidance set by the 2019 wastewater rate study.

BACKGROUND
The current sewer rates were established in a rate study conducted in 2014 and became effective on January 1, 2015. Council Bill 2014-183 was authorized by the city to incorporate the City's current rate structure for the customers of Joplin. Those rates were set for a five-year period that will end March 31, 2020.

On January 22, 2019 the City of Joplin hired Burns and McDonnell (Council Bill 2019-104) to convene a rate study analysis to determine what rates are needed to fund the city's wastewater treatment and maintenance programs. That study was completed and is the basis for the recommended action.

On November 19, 2019 Staff held a meeting with the satellite jurisdictions that transport their wastewater to the City of Joplin where it is treated and discharged in accordance with our NPDES permit issued by the State of Missouri.

DISCUSSION
The staff and a representative of Burns and McDonnell presented council with the proposed new rate structure on November 11, 2019 during a Council work session. At the conclusion of that meeting, Council directed Staff to proceed with preparing the necessary council bill for consideration at the December 2, 2019 City Council meeting. The rate study recommends increasing the sewer rates by 5% in each of the five years from 2020 to 2024 and that these rates would be applicable to all customers. All customers served that are not within the city limits of Joplin will pay those same rates, times a multiplier of 1.3. Approval of this rate structure will provide the City with the resources to adequately operate and maintain the wastewater collection and treatment system in a manner that will meet our permit requirements.

RECOMMENDATION
Staff recommends approval of Council Bill 2019-161 on first reading.

Sewer Rate Study

City of Joplin, Missouri

Project No. 114532

Draft Report
11/1/2019

Sewer Rate Study

prepared for

City of Joplin, Missouri

Project No. 114532

Draft Report
11/1/2019

prepared by

Burns & McDonnell Engineering Company, Inc.
Kansas City, Missouri

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LIST OF ABBREVIATIONS

Abbreviation	Term/Phrase/Name
AWWA	American Water Works Association
BLS	United States Bureau of Labor Statistics
Burns & McDonnell	Burns & McDonnell Engineering Company, Inc.
CIP	Capital Improvement Program
CPI-U	Consumer Price Index for all Urban Consumers
EPA	Environmental Protection Agency
Kgal	Thousand Gallons
FY	Fiscal Year
MHI	Median Household Income
NACWA	The National Association of Clean Water Agencies
O&M	Operation and Maintenance
The City	The City of Joplin, Missouri
The Study	Financial Plan and Rate Analysis

1.0 INTRODUCTION

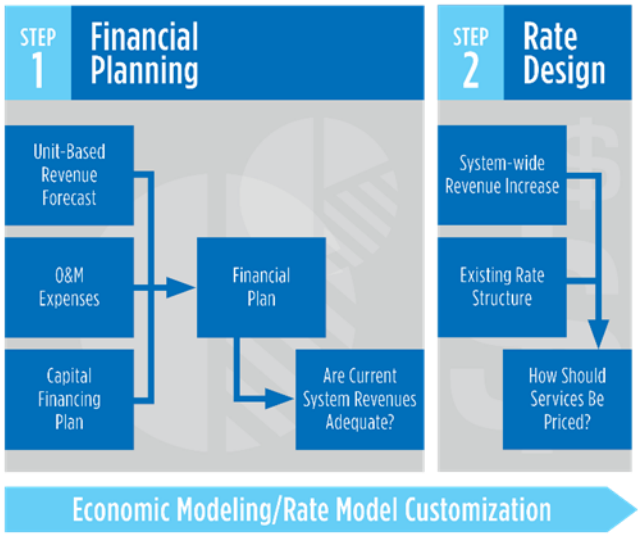
1.1 Study Background

The City of Joplin, Missouri (the City) retained Burns & McDonnell to perform a wastewater rate study (Study) including financial planning and rate analysis for the City's wastewater system. The Study provides a five-year financial plan that evaluates the sufficiency of revenues under existing rates to meet future operating and capital costs of the utility. If revenues are insufficient to meet funding requirements, recommendations are made to increase rates sufficiently to meet the utility's revenue requirements. Throughout this report various years are referenced regarding the City's financial plan. The years referenced are the City's fiscal years (FY), which are November 1st through October 31st.

1.2 Project Approach

To meet the Study objectives, Burns & McDonnell conducted the analysis in a two-step approach. This approach is depicted in Figure 1-1.

Figure 1-1: Study Methodology



Step 1: Financial Planning provides an indication of the adequacy of the revenue generated by current rates. The results of the financial forecast analysis answer the questions "Are the existing rates adequate?" and "If not, what level of overall revenue increase is needed?" The Financial Planning Analysis is presented in Section 2 of this report.

Step 2: Rate Design provides for the required revenue recovery. Once the overall level of revenue required is identified, a schedule of proposed rates is developed using the existing rate structure and

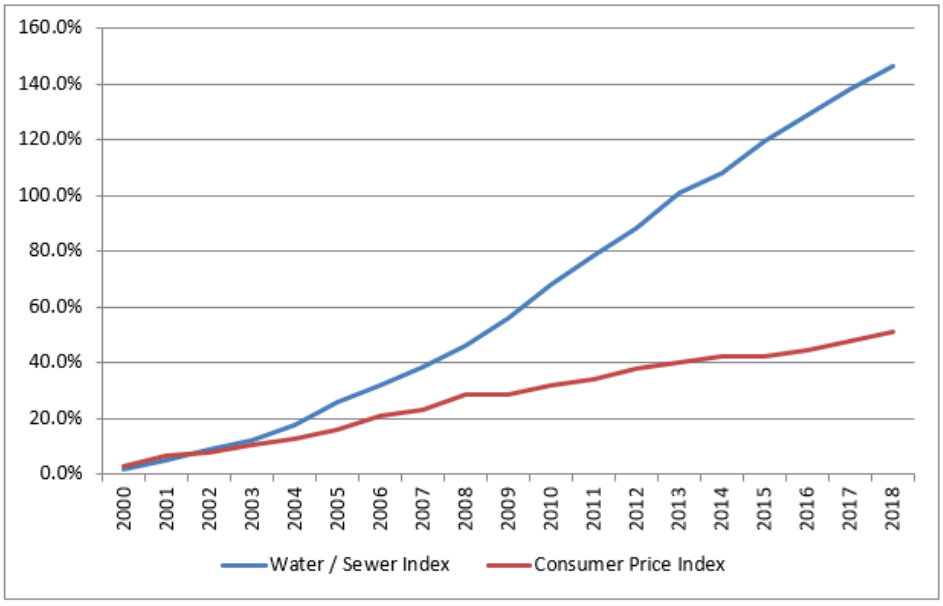
revenue increases from the financial plan. The development of proposed rates is discussed in Section 3.0 of this report.

1.3 Industry Trends in Sewer Rate Increases

Nationally, the cost of residential water and sewer service is rising faster than many other household costs. Replacement of aging infrastructure is one of several dynamics impacting utility rates. Other dynamics generally include increasing regulatory requirements, inflation on operating and capital costs, and a trend in declining consumption most often associated with more efficient fixtures and appliances and greater awareness of water conservation.

Every utility is different, and the relative importance of these dynamics will vary by utility. However, there is no doubt that water and sewer rate increases have substantially outpaced general inflation in the United States. The United States Bureau of Labor Statistics (BLS) tracks many facets of inflation. The most commonly referenced measure is the Consumer Price Index for all Urban Consumers (CPI-U) which measures inflation at the consumer level for a representative basket of goods. The BLS also tracks a combined inflation index for consumer water and sewer costs. Figure 1-2 compares changes in the BLS' consumer price index to changes in the BLS' water and sewer cost index.

Figure 1-2: Changes in General Inflation vs. Water and Sewer Rates



Source: Bureau of Labor Statistics, Consumer Price Index & Water & Sewer Maintenance Series

Annually, the water and sewer index has been increasing at approximately 5.0 percent per year, while CPI's annual rate of change is about 2.0 percent per year.

Other industry surveys reach similar conclusions regarding water and/or sewer rates. The National Association of Clean Water (NACWA) annually updates its *Cost of Clean Water Index*, which specifically surveys sewer utilities across the nation regarding the cost of residential sewer service. From 1985 through 2018, the annual increase according to this survey has been 5.0 percent per year. American Water Works Association (AWWA) also conducts a broad, annual water and sewer rate survey with comparable results regarding increases in water and sewer rates.

Despite these increasing costs for water and sewer service, many utilities continue to be challenged to adequately fund renewal and replacement of existing infrastructure. Understanding the reality of increasing costs within the sewer industry provides helpful context in evaluating proposed financial plans and rates for the City's sewer service.

2.0 FINANCIAL PLANNING ANALYSIS

2.1 Introduction to Financial Planning

The primary issue addressed in Financial Planning Analysis is revenue sufficiency. The results of Financial Planning Analysis answer the questions:

- "Are the existing rates adequate to meet future funding needs?"
- "If not, what level of overall revenue increase is needed?"

To determine if the existing schedule of rates can be expected to generate enough revenue to meet the City's operating and capital costs, Burns & McDonnell prepared a five-year financial projection of revenues and expenditures for the utility. A comparison of projected revenues and expenditures provides insight into the adequacy of overall revenue levels.

Our approach to Financial Planning involves the following basic steps:

1. Project revenues under existing rates.
2. Project utility expenditures.
3. Develop a multi-year financial plan
4. Evaluate financial sufficiency based on key performance indicators such as reserve balances.

The planning period includes the current fiscal year (FY) 2019 and a five-year forecast period, 2020 – 2024. The City utilizes a twelve-month fiscal year beginning November 1. The Financial Plan Analysis recognizes and references the same fiscal year in the forecast period.

The remainder of this section of the report discusses how the sewer utility financial plan was developed and identifies the sufficiency of existing rates to adequately meet future costs.

2.2 Sewer Utility Revenues under Existing Rates

The first step in Financial Planning Analysis was to project revenues under the existing schedule of rates. To support this effort an analysis of customer billing determinants and revenues was performed.

2.2.1 Historical and Projected Customers

Table 2-1 presents the historical sewer customers served by the City from 2016 to 2018 and the projection of customers for the 2020 to 2024 planning period. In recent years, the City has experienced a slight increase in the number of accounts. For the purpose of this Study, forecasted accounts are anticipated to remain consistent with 2018 historical levels.

2.2.2 Historical and Projected Volumes

Table 2-1 also presents the historical and projected billed sewer volume, which has also been relatively stable. Projected volumes are anticipated to remain consistent with recent history throughout the Study period.

Table 2-1: Historical and Projected Accounts and Volume

Line No.		Historical			Budget	Projected				
		2016	2017	2018	2019	2020	2021	2022	2023	2024
	Accounts									
1	Residential - Inside	18,462	19,047	19,118	19,118	19,118	19,118	19,118	19,118	19,118
2	Residential - Outside	348	365	356	356	356	356	356	356	356
3	Commercial - Inside	1,947	1,951	1,938	1,938	1,938	1,938	1,938	1,938	1,938
4	Commercial - Outside	30	30	30	30	30	30	30	30	30
5	Industrial - Inside	37	37	35	35	35	35	35	35	35
6	Inside Meter-Related Residence	102	104	103	103	103	103	103	103	103
7	Other Public Authority - Inside	90	94	95	95	95	95	95	95	95
8	Outside Meter-Related Residence	-	3	3	3	3	3	3	3	3
9	Total Accounts	21,015	21,631	21,679	21,678	21,678	21,678	21,678	21,678	21,678
	Billed Volume *(1000 Gallons)*									
10	Residential - Inside	917,414	940,764	958,283	958,270	958,270	958,270	958,270	958,270	958,270
11	Residential - Outside	7,679	8,137	8,043	8,030	8,030	8,030	8,030	8,030	8,030
12	Commercial - Inside	597,465	594,907	599,146	599,300	599,300	599,300	599,300	599,300	599,300
13	Commercial - Outside	40,734	49,080	45,332	45,460	45,460	45,460	45,460	45,460	45,460
14	Industrial - Inside	715,889	854,444	794,009	794,010	794,010	794,010	794,010	794,010	794,010
15	Inside Meter-Related Residence	27,739	29,064	31,623	31,500	31,500	31,500	31,500	31,500	31,500
16	Other Public Authority - Inside	36,056	81,150	39,994	39,820	39,820	39,820	39,820	39,820	39,820
17	Outside Meter-Related Residence	-	1,739	2,113	2,110	2,110	2,110	2,110	2,110	2,110
18	Total Billed Volume	2,342,975	2,559,284	2,478,543	2,478,500	2,478,500	2,478,500	2,478,500	2,478,500	2,478,500

2.2.3 Existing Sewer Rates

The current sewer rate schedule is shown in Table 2-2 and features a fixed monthly base fee that varies by meter size, and a uniform volumetric rate applicable to all domestic strength customers. High strength industrial customers pay surcharge rates based on sampled wastewater strength. Outside City rates reflect a multiplier of 1.3x the Inside City rates.

Table 2-2: Existing Sewer Rates

Line No.	Service Charge:		In City		Out of City
1	3/4" or smaller	$	31.56	$	41.03
2	1"	$	40.51	$	52.66
3	1.5"	$	62.94	$	81.82
4	2"	$	89.82	$	116.77
5	3"	$	152.56	$	198.33
6	4"	$	242.13	$	314.77
7	6"	$	466.20	$	606.06
	Volume Charge:				
8	per 1,000 gallons	$	2.07	$	2.69
	Surcharges ($/lb):				
9	BOD	$	0.87	$	1.13
10	SS	$	0.53	$	0.69

2.2.4 User Revenues under Existing Rates

Table 2-3 presents historical user revenues for 2016 to 2018 and a projection of user revenues under existing rates for the planning period. The projection of user revenues was estimated based on the forecasted accounts, estimated volumes, and existing rates.

Historical sewer user revenues ranged from approximately $11.2 million in 2016 to $14.1 million in 2018. Increases in historical revenues are associated primarily with rate increases adopted in the last rate study. Overall, sewer user charge revenues under existing 2019 rates are projected to remain consistent with 2019 through the end of the Study period.

Table 2-3: Historical and Projected Sewer User Charge Revenues

Line No.		Historical 2016	Historical 2017	Historical 2018	Budget 2019	Projected 2020	Projected 2021	Projected 2022	Projected 2023	Projected 2024
	User Revenues Under Existing Rates									
1	Residential - Inside	$ 6,714,703	$ 7,603,229	$ 8,471,456	$ 9,318,500	$ 9,318,500	$ 9,318,500	$ 9,318,500	$ 9,318,500	$ 9,318,500
2	Residential - Outside	397,761	449,387	456,341	501,200	501,200	501,200	501,200	501,200	501,200
3	Commercial - Inside	1,738,392	1,911,881	2,145,499	2,360,700	2,360,700	2,360,700	2,360,700	2,360,700	2,360,700
4	Commercial - Outside	109,151	114,383	141,868	156,500	156,500	156,500	156,500	156,500	156,500
5	Industrial - Inside [1]	2,074,325	2,715,921	2,744,802	3,019,300	3,019,300	3,019,300	3,019,300	3,019,300	3,019,300
6	Inside Meter-Related Residence	81,875	90,239	105,512	115,600	115,600	115,600	115,600	115,600	115,600
7	Other Public Authority - Inside	123,446	214,430	91,278	100,000	100,000	100,000	100,000	100,000	100,000
8	Outside Meter-Related Residence	-	6,234	8,034	8,800	8,800	8,800	8,800	8,800	8,800
9	Total User Revenues	$ 11,239,653	$ 13,105,705	$ 14,164,790	$ 15,580,600	$ 15,580,600	$ 15,580,600	$ 15,580,600	$ 15,580,600	$ 15,580,600
10	Adjustment for Change in Default Use	$ -	$ -	$ -	$ -	$ (104,300)	$ (104,300)	$ (104,300)	$ (104,300)	$ (104,300)
11	Total Net User Revenues	$ 11,239,653	$ 13,105,705	$ 14,164,790	$ 15,580,600	$ 15,476,300	$ 15,476,300	$ 15,476,300	$ 15,476,300	$ 15,476,300

[1] Includes BOD and SS charges

2.2.5 Proposed Default Use Adjustment

For residential billing purposes, the City uses average water use over a winter quarter for determining billable sewer flow for its wastewater residential customers. Use of average water use during a winter period as a basis for sewer billing is a common approach, since sewer flow is not metered, and winter use generally reflects indoor water use that is most likely to be conveyed through the sewer system. This winter quarter billable flow is calculated on the most recent history for each residential account. When a new sewer account is created that does not have enough water use history to establish an average winter quarter, the City uses a proxy or default usage level of 6 thousand gallons per month. Based on analysis performed by the City, the default usage level is recommended to be lowered to 5 thousand gallons beginning in 2020. The City estimates 4,200 accounts are typically billed on a default usage basis. As such, reducing the default usage by 1 thousand gallons per month is projected to reduce revenues by about $104,000. This adjustment is shown on Line 10 of Table 2-3.

2.3 Sewer Utility Expenditures

The Sewer Utility's primary cash expenditures include the following operating and capital costs:

- Operation and Maintenance (O&M) Expenses
- Revenue-Financed Capital Improvement Program (CIP) Expenditures
- Existing Debt Service Expenditures

2.3.1 Operation and Maintenance Expenses

Table 2-4 presents the recent historical and projected sewer system operation and maintenance (O&M) expenses through the 2024 planning period. The sewer O&M expenses include the collection, treatment, and administrative operating costs incurred by the utility in providing sewer service to the City. Costs related to major capital projects are excluded from Table 2-4 and will be discussed later in this report.

O&M costs for 2019 reflect the approved budget. Projected O&M expenses are escalated from the 2019 budget amounts based on 2.0 percent annual inflation applied uniformly to all existing O&M costs from 2020 through 2024.

Lines 15 through 21 of Table 2-4 include allowances for incremental personnel costs over the five-year projection period. Over the course of the five-year forecast, these incremental costs are phased-in to mitigate the impact to each year's operating cost.

Table 2-4: Historical and Projected Operation and Maintenance Expenses

Line No.		Historical			Budgeted	Projected				
		2016	2017	2018	2019	2020	2021	2022	2023	2024
	Billing & Collection									
1	Personnel Services	132,200	153,300	190,800	183,000	186,700	190,400	194,200	198,100	202,100
2	Supplies	194,800	149,800	202,700	178,900	182,500	186,200	189,900	193,700	197,600
3	Other Purchases	317,300	363,100	388,500	394,400	402,300	410,300	418,500	426,900	435,400
4	Total Billing & Collection	644,300	666,200	782,000	756,300	771,500	786,900	802,600	818,700	835,100
			3.4%	*17.4%*	*-3.3%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
	Sewer Treatment									
5	Personnel Services	1,695,900	1,812,300	1,876,300	1,911,300	1,949,500	1,988,500	2,028,300	2,068,900	2,110,300
6	Supplies	1,831,000	1,805,200	1,846,500	2,138,600	2,181,400	2,225,000	2,269,500	2,314,900	2,361,200
7	Other Purchases	94,200	110,700	96,500	107,500	109,700	111,900	114,100	116,400	118,700
8	Other Financing Uses	249,300	2,600	2,600	2,600	2,600	2,600	2,600	2,600	2,600
9	Total Sewer Treatment Expense	3,870,400	3,730,800	3,821,900	4,160,000	4,243,200	4,328,000	4,414,500	4,502,800	4,592,800
			-3.6%	*2.4%*	*8.8%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
	Sewer Maintenance									
10	Personnel Services	365,300	389,000	532,700	538,500	549,200	560,200	571,400	582,800	594,500
11	Supplies	309,000	463,700	306,400	340,400	347,200	354,100	361,200	368,400	375,800
12	Other Purchases	29,600	36,400	31,300	34,500	35,200	35,900	36,600	37,300	38,000
13	Other Financing Uses	38,700	1,300	51,300	1,300	1,300	1,300	1,300	1,300	1,300
14	Total Sewer Maintenance Expense	742,600	890,400	921,700	914,700	932,900	951,500	970,500	989,800	1,009,600
			19.9%	*3.5%*	*-0.8%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*	*2.0%*
	Incremental O&M									
15	Heavy Equipment Operator	-	-	-	-	57,300	58,500	59,700	60,900	62,100
16	Laborer I	-	-	-	-	-	47,300	48,300	49,300	50,300
17	WW Maintenance Electrician	-	-	-	-	69,600	71,000	72,400	73,800	75,300
18	Chief Operator to WWTP Manager	-	-	-	-	25,500	26,000	26,500	27,000	27,500
19	WWTP Maintenance Personnel	-	-	-	-	-	-	64,000	65,300	66,600
20	Maintenance Plant Technician	-	-	-	-	-	-	-	60,600	61,800
21	Total Incremental O&M	-	-	-	-	152,400	202,800	270,900	336,900	343,600
							33.1%	*33.6%*	*24.4%*	*2.0%*
22	Total O&M	5,257,300	5,287,400	5,525,600	5,831,000	6,100,000	6,269,200	6,458,500	6,648,200	6,781,100
			0.6%	*4.5%*	*5.5%*	*4.6%*	*2.8%*	*3.0%*	*2.9%*	*2.0%*

[1] All projected costs are assumed to inflate at 2%

2.3.2 Projected Capital Improvement Expenditures

Table 2-5 presents the projected capital improvement (CIP) expenditures anticipated for the planning period. The CIP used for this Study is based on the five-year capital planning estimates developed by the City. Overall, the total CIP through 2024 amounts to $46.7 million and includes projects ranging from truck and pump replacement to sewer interceptor replacement. Improvements are anticipated throughout the system, including projects at the treatment plant, lift stations, interceptors, force mains and other components of the collection system. Improvements will enable the rehabilitation of existing critical infrastructure, help mitigate infiltration and inflow into the collection system, and help manage peak flow during wet weather events.

Table 2-5: Capital Improvement Program

Line No.		Budgeted 2019	Projected 2020	2021	2022	2023	2024	Total
1	Replacement Computer	850	-	-	-	-	-	850
2	Rehabilitate Able Body Lift Station	15,000	-	-	-	-	-	15,000
3	Twin Equalization Basin Rehabilitation - Phase 2	175,000	-	-	-	-	-	175,000
4	Digester Rehabilitation - Turkey Creek	200,000	-	-	-	-	-	200,000
5	Replacement Boiler - Turkey Creek	225,000	-	-	-	-	-	225,000
6	Control Panels SCADA - Remaining Lift Stations	65,000	-	-	-	-	-	65,000
7	Replacement 1 1/2 - Ton Truck with Crane Body	95,000	-	-	-	-	-	95,000
8	Replacement Truck with Utility Vehicle	12,000	-	-	-	-	-	12,000
9	Replacement Generator - Filmore Bridge Lift Station	65,000	-	-	-	-	-	65,000
10	Portable Compressor	3,000	-	-	-	-	-	3,000
11	Replacement High-End Computer	1,750	-	-	-	-	-	1,750
12	Replacement Ruggedized Laptop Computer (4)	17,600	-	-	-	-	-	17,600
13	7th Street East Annexation Sanitary Sewer Extension	400,000	-	-	-	-	-	400,000
14	I / I Rehabilitation	1,750,000	-	-	-	-	-	1,750,000
15	Parallel Line from Fillmore Bridge	2,500,000	-	-	-	-	-	2,500,000
16	Peak Flow Storage Study - Phase 2	300,000	-	-	-	-	-	300,000
17	Replacement Pressure Main - 44th & Virginia	500,000	-	-	-	-	-	500,000
18	Parallel Line Tin Cup to Filmore Bridge Lift Station Desig	500,000	-	-	-	-	-	500,000
19	Water's Edge Project	-	-	931,100	-	-	-	931,100
20	Replace Rodder Truck	-	300,000	-	-	-	-	300,000
21	Lone Elm Interceptor Project	-	-	500,000	1,000,000	1,500,000	-	3,000,000
22	Inflow & Infiltration (Part of Plan w/DNR)	-	1,750,000	1,500,000	1,500,000	1,500,000	1,500,000	7,750,000
23	Tertiary Filter Replacement	1,800,000	-	-	-	-	-	1,800,000
24	Replace Junction Box Soccer Field	-	200,000	-	-	-	-	200,000
25	Install Parallel Gravity from Junction box to Lone Elm	-	1,200,000	-	-	-	-	1,200,000
26	Replace WEMCO Pump	-	-	-	-	-	-	-
27	Freightliner	-	225,000	-	-	-	-	225,000
28	Phase I Planning Installation of Offline Storage Basin	-	350,000	-	-	-	-	350,000
29	Parallel Force Main Tin Cup to Filmore Bridge	-	2,000,000	1,000,000	-	-	-	3,000,000
30	Roof Replacement for 3 Digeters	-	775,000	-	-	-	-	775,000
31	Replace P/U 4x4 Sampler Truck	-	-	-	-	-	-	-
32	Replace/Rehab Lift Station	-	-	80,000	-	-	-	80,000
33	Rehab 60 " Main Sewer line	-	-	-	1,500,000	-	-	1,500,000
34	Replace Media Trickling Filter (TC)	-	-	-	-	-	1,100,000	1,100,000
35	Replace WEMCO Pump	-	-	-	-	-	-	-
36	Dump Truck	-	-	-	200,000	-	-	200,000
37	Mower	-	-	-	-	-	-	-
38	Replace P/U	-	-	-	-	-	-	-
39	Rehab Digestors	-	-	300,000	-	-	-	300,000
40	Install Equipment Building TC WWTP	-	-	-	700,000	-	-	700,000
41	Rehab 44th Street & Virginia Lift Station	-	-	300,000	-	-	-	300,000
42	Glendale Interceptor Sewer Replacement Phase 1	-	-	842,700	-	-	-	842,700
43	Glendale Interceptor Sewer Replacement Phase 2	-	-	-	837,300	-	-	837,300
44	Replace/Rehab Lift Station	-	-	-	85,000	-	-	85,000
45	Replace Pressure Main	-	-	-	500,000	-	-	500,000
46	Replace WEMCO Pump	-	-	-	-	-	-	-
47	Replace Generators & Pumps at Misc. Lift Stations	-	-	-	185,000	-	-	185,000
48	Replace P/U Truck	-	-	-	-	-	-	-
49	Equalization Basin Rehab TC WWTP	-	-	-	-	-	250,000	250,000
50	Install Equipment Building SC WWTP	-	-	-	-	700,000	-	700,000
51	VACTOR Truck	-	-	-	350,000	-	-	350,000
52	Install Offline Storage Detention Basin	-	-	-	1,500,000	2,000,000	-	3,500,000
53	Glendale Interceptor Sewer Replacement Phase 3	-	-	-	-	823,100	-	823,100
54	I-44 Interceptor Sewer Replacement	-	-	-	-	-	2,000,000	2,000,000
55	RODDER TRUCK	-	-	-	-	-	350,000	350,000
56	Replace/Rehab Lift Station	-	-	-	-	85,000	-	85,000
57	Buy new Jetter Truck	-	-	-	-	250,000	-	250,000
58	Replace/Rehab Lift Station	-	-	-	-	250,000	-	250,000
59	Replace Pressure	-	-	-	-	150,000	-	150,000
60	Rehab Trickling Filter (TC)	-	-	-	-	-	-	-
61	Pumps for in plant operations	-	-	-	-	-	320,000	320,000
62	Scrubbers for Bio Gas (Two)	-	-	-	-	150,000	-	150,000
63	Piston Pump	-	-	-	-	300,000	-	300,000
64	Peterbilt Press VAC	-	-	-	-	225,000	-	225,000
65	I-44 Interceptor Sewer Replacement	-	-	-	-	-	-	-
66	Rehab Clarifier	-	-	-	-	-	125,000	125,000
67	Replace Pumps	-	-	-	-	-	55,000	55,000
68	Replace Media in Digestor	-	-	-	-	-	80,000	80,000
69	Clean-out of Digester	-	-	-	-	-	-	-
70	Replace Pressure Main	-	-	-	-	-	1,000,000	1,000,000
71	Replace Control Boxes	-	-	-	-	-	150,000	150,000
72	Replace P/U Truck	-	-	-	-	-	-	-
73	Replace SS Main Trunk Line	-	-	-	-	-	1,000,000	1,000,000
74	New Development Project	-	320,000	320,000	320,000	320,000	320,000	1,600,000
75	Total	8,625,200	7,120,000	5,773,800	8,677,300	8,253,100	8,250,000	46,699,400

2.3.3 Projected Debt Service Requirements

The City currently has four outstanding sewer system debt issues, summarized in Table 2-6. The Series 2009 and 2010 debt will be fully amortized in 2031, the Series 2011 debt will be fully amortized in 2033, and the Series 2014 debt will be fully amortized in 2035.

All proposed CIP will be funded on a pay-as-you-go basis, with no new debt issuance anticipated during the Study period.

Table 2-6: Existing and Proposed Debt Service

Line No.		Budgeted 2019	Projected 2020	2021	2022	2023	2024
	Existing Debt Issues						
1	Series 2009	82,515	83,993	84,353	84,793	85,110	85,606
2	Series 2010	378,733	400,674	400,687	398,863	400,828	400,848
3	Series 2011	1,600,522	1,713,001	1,716,685	1,720,674	1,723,946	1,728,479
4	Series 2014	150,625	162,685	162,831	164,815	165,837	166,695
5	Total Existing Debt Service	2,212,400	2,360,400	2,364,600	2,369,100	2,375,700	2,381,600
	Proposed Debt [1]						
6	N/A	-	-	-	-	-	-

[1] No new issuance included in the plan
[2] Does not include the debt administrative fee

Sewer administrative fees are included in the cashflow in Table 2-7.

2.4 Sewer Utility Financial Plan Cash Flow

Table 2-7 presents a cash flow that evaluates the sufficiency of revenues under existing rates to meet future cash requirements of the system.

Line 1 of Table 2-7 shows net user revenues under existing rates as shown previously on Table 2-1. Lines 2 through 6 of Table 2-7 present proposed revenue increases needed to finance the City's operating and capital costs for the planning period and sustain reserves. Beginning in 2020, a levelized plan of 5.0 percent increases are proposed to be implemented annually through 2024.

The first proposed increase is anticipated to take effect in April of 2020. All other proposed increases are anticipated to take effect in January of their respective years. With input from City Finance, the incremental revenue associated with the proposed increases has been adjusted to prudently reflect price elasticity associated with the proposed increases.

Other revenues are shown on Lines 9 through 14 of Table 2-7. These revenue streams are based on the 2019 Budget and are estimated to remain constant over the forecast period. Line 15 summarizes the total operating revenues forecasted over the study period. Including proposed revenue adjustments, total Sewer Utility operating revenues are projected to range from $15.8 million in 2019 to $19.0 million in 2024.

Operating revenue requirements are shown on Lines 16 through 23 of Table 2-7 and include O&M expenses, transfers to the General Fund, and existing debt service payments and associated debt administrative fees. O&M expenses, identified previously on Line 22 of Table 2-4, are shown on Line 16 of Table 2-7. Transfers to the General Fund are based on the 2019 Budget and inflated at 2.0 percent annually, consistent with all other O&M. Total Debt Service on Line 22 of Table 2-7 includes existing debt shown previously in Table 2-6, and the Missouri Department of Natural Resources debt administrative fee shown on Line 20. Line 23 summarizes total operating revenue requirements for each year of the Study period.

Annual operating balance is shown on Line 24 and is determined by deducting total revenue requirements, Line 23, from the grand total sewer revenue found on Line 15.

Lines 25 through 29 projects the operating fund balance. The 2018 audit indicates an ending unrestricted net position of $10.7 million and represents the beginning balance shown on Line 25 of Table 2-7. Note that this amount excludes restricted reserves of $3.7 million for capital replacement and $0.4 million for debt service. The annual operating cash projected to be generated by each fiscal year, shown previously on Line 24, is added to the operating balance on Line 26. As a matter of policy, the utility is targeting a minimum operating reserve of $5.0 million. After taking into consideration the beginning balance and annual cash flow, any monies in excess of the minimum reserve target are considered available for capital projects and are transferred to the capital flow of funds as represented on Line 27.

Table 2-7: Projected Sewer Utility Cash Flow

Line No.		Budget 2019	Projected 2020	2021	2022	2023	2024
	Sewer Utility Operating Flow of Funds						
1	Net Revenue [1]	15,580,600	15,476,300	15,476,300	15,476,300	15,476,300	15,476,300
	Proposed Revenue Adjustments [2]						
	Year / Month / Increase						
2	2020 / 5 / 5.0%		412,700	619,100	619,100	619,100	619,100
3	2021 / 2 / 5.0%			590,200	643,800	643,800	643,800
4	2022 / 2 / 5.0%				613,800	669,600	669,600
5	2023 / 2 / 5.0%					638,300	696,400
6	2024 / 2 / 5.0%						663,900
7	Total Proposed Additional Revenue	-	412,700	1,209,300	1,876,700	2,570,800	3,292,800
8	Total Sewer User Charge Revenue	15,580,600	15,889,000	16,685,600	17,353,000	18,047,100	18,769,100
	Other Revenue						
9	Charges and Assessments	160,600	160,600	160,600	160,600	160,600	160,600
10	Other Income and Donations	22,100	22,100	22,100	22,100	22,100	22,100
11	Federal Grants	-	-	-	-	-	-
12	State Grants	-	-	-	-	-	-
13	Local Grants	-	-	-	-	-	-
14	Total Other Revenue	182,700	182,700	182,700	182,700	182,700	182,700
15	**Grand Total Sewer Revenue**	**15,763,300**	**16,071,700**	**16,868,300**	**17,535,700**	**18,229,800**	**18,951,800**
	Revenue Requirements						
16	Operation and Maintenance Expense	5,831,000	6,100,000	6,269,200	6,458,500	6,648,200	6,781,100
17	Transfers Out	1,447,800	1,476,800	1,506,300	1,536,400	1,567,100	1,598,400
18	Total O&M	7,278,800	7,576,800	7,775,500	7,994,900	8,215,300	8,379,500
	Debt Service						
19	Existing Debt	2,212,400	2,360,400	2,364,600	2,369,100	2,375,700	2,381,600
20	Debt Admin Fee	143,600	135,200	126,600	116,100	108,900	99,700
21	Proposed Debt	-	-	-	-	-	-
22	Total Debt Service	2,356,000	2,495,600	2,491,200	2,485,200	2,484,600	2,481,300
23	**Total Revenue Requirements**	**9,634,800**	**10,072,400**	**10,266,700**	**10,480,100**	**10,699,900**	**10,860,800**
24	**Annual Operating Balance**	**6,128,500**	**5,999,300**	**6,601,600**	**7,055,600**	**7,529,900**	**8,091,000**
25	Beginning Balance	10,672,900	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
26	Annual Operating Balance	6,128,500	5,999,300	6,601,600	7,055,600	7,529,900	8,091,000
27	Transfers to Capital	(11,801,400)	(5,999,300)	(6,601,600)	(7,055,600)	(7,529,900)	(8,091,000)
28	**Ending Balance**	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000	5,000,000
29	*Op. Reserve Target [3]*	*5,000,000*	*5,000,000*	*5,000,000*	*5,000,000*	*5,000,000*	*5,000,000*
	Sewer Utility Capital Flow of Funds						
	Sources						
30	Beginning Balance Capital Funds	-	3,176,200	2,055,500	2,883,400	1,261,700	538,500
31	Transfer from Operations	11,801,400	5,999,300	6,601,600	7,055,600	7,529,900	8,091,000
32	Anticipated Grants	-	-	-	-	-	-
33	Debt Issuance	-	-	-	-	-	-
34	**Total Capital Sources**	**11,801,400**	**9,175,500**	**8,657,100**	**9,939,000**	**8,791,600**	**8,629,500**
	Uses						
35	Capital Improvement Projects	8,625,200	7,120,000	5,773,700	8,677,300	8,253,100	8,250,000
36	Bond Issuance Expense	-	-	-	-	-	-
37	**Total Capital Uses**	**8,625,200**	**7,120,000**	**5,773,700**	**8,677,300**	**8,253,100**	**8,250,000**
38	**Annual Capital Balance**	**3,176,200**	**2,055,500**	**2,883,400**	**1,261,700**	**538,500**	**379,500**
	Debt Service Coverage						
39	Net Operating Revenue Available for Debt Service	9,932,300	9,971,700	10,599,100	11,077,200	11,581,600	12,170,700
40	Annual Debt Service	2,356,000	2,495,600	2,491,200	2,485,200	2,484,600	2,481,300
41	Debt Service Coverage	4.22	4.00	4.25	4.46	4.66	4.90
	Affordability Projection						
42	Typical Monthly Wastewater Bill [4]	41.91	43.99	46.20	48.49	50.92	53.49
43	Median Household Income [5]	42,565	43,337	44,122	44,922	45,736	46,566
44	Annual Average Bill/ MHI [6]	1.18%	1.22%	1.26%	1.30%	1.34%	1.38%

[1] Assumes default use is reduced from 6 kgal to 5 kgal beginning in 2020

[2] Effectivness of proposed revenue increases is reduced 20%

[3] Operating Reserve Target is roughly 70% of annual O&M

[4] The typical bill calculation reflects average use of 5 kgal per month. Future bills reflect proposed increases of 5% per year in FY 2020 through 2024

[5] MHI based on 5-Year American Community Survey 2017 estimate. Forecasted MHI assumes 1.81% annual increases based on historical rate of change since 2009.

[6] (Monthly Bill x 12) / MHI

Capital sources and uses of funds are shown on Lines 30 through 38 of Table 2-7. The primary source of funds for capital projects are the transfers from operations shown on Line 31. There are no proposed debt issuances with the financial plan for the funding of capital projects, as shown on Line 33. Uses of funds are shown on Line 35 and match the total CIP shown on Line 75 of Table 2-5. Line 38 shows a positive annual capital balance for all the years of the forecast.

Lines 39 through 41 evaluate the debt service coverage requirements for the City. Debt service coverage is shown on Line 41. Debt service coverage is a frequent requirement in bond covenants associated with utility revenue bonds. This coverage ratio is calculated as follows:

$$\left(\frac{Grand\ Total\ Sewer\ Revenue\ -O\&M\ Expense}{Total\ Debt\ Service}\right)$$

Debt service coverage represents a degree of security to bondholders that the utility could encounter lower revenues or higher O&M and still have the financial capacity to pay annual debt service. The City has an internal debt service coverage target of 1.5x. As shown on Line 41 the City is above this internal target throughout the Study period.

Lines 42 through 44 provide some context regarding the affordability of wastewater bills. One of the measures utilized by the Environmental Protection Agency (EPA) in considering the burden associated with Consent Decrees is the "residential indicator." This indicator compares the annual wastewater bill of a residential user to median household income (MHI). For the purpose of this analysis, 5 thousand gallons a month has been used to calculate the annual wastewater bill. Dividing the 2019 annual wastewater bill by the City of Joplin's MHI indicates that wastewater bills generally represent about 1.18 percent of MHI. Generally speaking, the EPA considers this ratio to be "high burden" when it exceeds 2.0 percent.

This ratio has been projected out through the Study period by inflating MHI based on growth in the City's MHI since 2009, as shown on Line 43. The cost for annual wastewater service is increasing by 5.0 percent annually as has been proposed in the financial plan, as shown on Line 42. At the end of the Study period, it is estimated that wastewater bills will represent approximately 1.38 percent of MHI, well below a high burden designation.

3.0 PROPOSED RATE DESIGN

3.1 Introduction

The primary focus of Step 2, Rate Design is the development of proposed rates. The objective of rate design is to design rates for the utility that generate adequate revenues to meet the projected operating and capital costs, while sustaining the utility's sound financial performance.

3.2 Existing and Proposed Wastewater Rates

The existing schedule of wastewater rates, which was shown previously in Table 2-2, became effective January 1, 2019. The existing rates feature a monthly facility charge based on meter size and a volume charge per 1,000 gallons. Outside City rates are based on a 30 percent differential over Inside City rates. Industrial customers with high strength discharge are monitored and assessed a surcharge based on pounds in excess of domestic strength.

Existing and proposed wastewater rates are shown in Table 3-1. Proposed wastewater rates were designed using the existing rate structure, adjusted proportionately in accordance with the system adjustments summarized in Table 2-7. Proposed rates for 2020 are assumed to be effective in April 2020, while all subsequent rates are assumed to be effective on January 1 of each fiscal year.

Table 3-1: Proposed Wastewater Rates

Line No.	Description	Existing 2019	Proposed 2020	2021	2022	2023	2024
	INSIDE CITY						
	Monthly Facility Charge - $/bill						
1	3/4" or smaller	$ 31.56	$ 33.14	$ 34.80	$ 36.54	$ 38.37	$ 40.29
2	1"	$ 40.51	$ 42.54	$ 44.67	$ 46.90	$ 49.25	$ 51.71
3	1.5"	$ 62.94	$ 66.09	$ 69.39	$ 72.86	$ 76.50	$ 80.33
4	2"	$ 89.82	$ 94.31	$ 99.03	$ 103.98	$ 109.18	$ 114.64
5	3"	$ 152.56	$ 160.19	$ 168.20	$ 176.61	$ 185.44	$ 194.71
6	4"	$ 242.13	$ 254.24	$ 266.95	$ 280.30	$ 294.32	$ 309.04
7	6"	$ 466.20	$ 489.51	$ 513.99	$ 539.69	$ 566.67	$ 595.00
8	**Volume Charge - $/1,000 gal**	$ 2.07	$ 2.17	$ 2.28	$ 2.39	$ 2.51	$ 2.64
9	**BOD Surcharge - $/lb**	$ 0.87	$ 0.91	$ 0.96	$ 1.01	$ 1.06	$ 1.11
10	**SS Surcharge - $/lb**	$ 0.53	$ 0.56	$ 0.59	$ 0.62	$ 0.65	$ 0.68
	OUTSIDE CITY						
	Monthly Facility Charge - $/bill						
11	3/4" or smaller	$ 41.03	$ 43.08	$ 45.24	$ 47.50	$ 49.88	$ 52.38
12	1"	$ 52.66	$ 55.30	$ 58.07	$ 60.97	$ 64.03	$ 67.22
13	1.5"	$ 81.82	$ 85.92	$ 90.21	$ 94.72	$ 99.45	$ 104.43
14	2"	$ 116.77	$ 122.60	$ 128.74	$ 135.17	$ 141.93	$ 149.03
15	3"	$ 198.33	$ 208.25	$ 218.66	$ 229.59	$ 241.07	$ 253.12
16	4"	$ 314.77	$ 330.51	$ 347.04	$ 364.39	$ 382.62	$ 401.75
17	6"	$ 606.06	$ 636.36	$ 668.19	$ 701.60	$ 736.67	$ 773.50
18	**Volume Charge - $/1,000 gal**	$ 2.69	$ 2.82	$ 2.96	$ 3.11	$ 3.26	$ 3.43
19	**BOD Surcharge - $/lb**	$ 1.13	$ 1.18	$ 1.25	$ 1.31	$ 1.38	$ 1.44
20	**SS Surcharge - $/lb**	$ 0.69	$ 0.73	$ 0.77	$ 0.81	$ 0.85	$ 0.88

3.3 Typical Bills and Residential Bill Comparison

A comparison of a typical monthly wastewater bill for a residential customer with 5 thousand gallons of billable flow has been calculated under existing and proposed rates in Table 3-2. In 2020, the monthly wastewater bill for an average residential customer under proposed rates will be $2.08 more per month. The percentage adjustment of the residential typical bill is shown on Line 3 and correlates to the overall system revenue increase for each fiscal year.

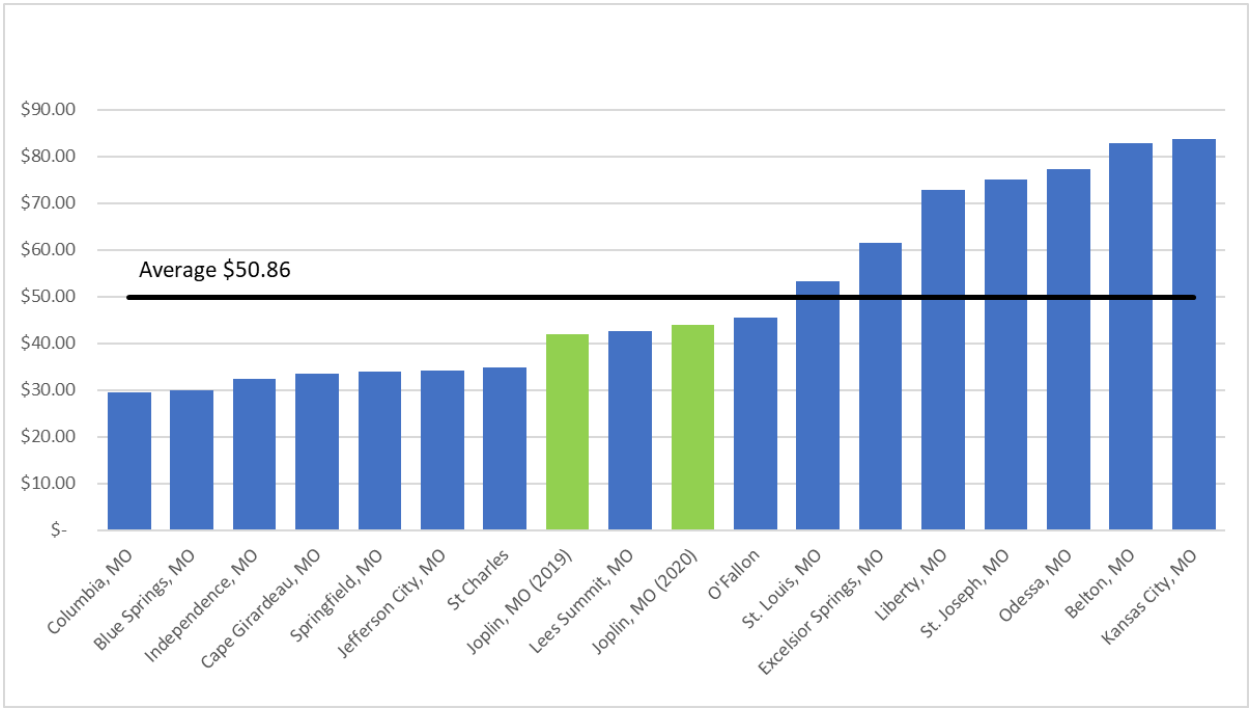
Table 3-2: Proposed Monthly Wastewater Bills

Line No.	Description	Billable Flow Kgal	Existing 2019	Proposed Monthly Bill 2020	2021	2022	2023	2024
1	Typical Residential Bill	5.0	$ 41.91	$ 43.99	$ 46.20	$ 48.49	$ 50.92	$ 53.49
	Incremental Increase in Typical Bill							
2	Dollars			$ 2.08	$ 2.21	$ 2.29	$ 2.43	$ 2.57
3	Percentage			5.0%	5.0%	5.0%	5.0%	5.0%

A comparison of monthly Residential typical bills from other regional wastewater utilities was also completed and is shown in Figure 3-1. Under existing rates, the typical Joplin residential bill is indicated to be in the middle within this regional comparison. Under proposed rates, the position of Joplin's typical residential bill remains in the middle when compared to other regional and state wastewater utilities. It should also be noted that it is likely that surrounding community's sewer rates will increase in the future as well.

Overall, the comparison shown in Figure 3-1 indicates that the typical residential wastewater bill under proposed rates is competitively positioned among regional wastewater utilities.

Figure 3-1: Residential Monthly Bill Comparison



3.4 Statement of Limitations

In preparation of the City of Joplin Sewer Rate Study (Study), Burns & McDonnell relied upon information provided by the City. The information included various analyses, computer-generated information and reports, audited financial reports, and other financial and statistical information, as well as other documents such as operating budgets and current retail water rate schedules. In addition, input to key assumptions regarding expected future levels of revenue, sales, and expenditures was provided by City staff to Burns & McDonnell. While Burns & McDonnell has no reason to believe that the information provided, and upon which Burns & McDonnell has relied, is inaccurate or incomplete in any material respect, Burns & McDonnell has not independently verified such information and cannot guarantee its accuracy or completeness.

Estimates and projections prepared by Burns & McDonnell relating to financial forecasting and costs are based on Burns & McDonnell's experience, qualifications, and judgment as a professional consultant. Since Burns & McDonnell has no control over weather, cost and availability of labor, material and equipment, labor productivity, contractors' procedures and methods, unavoidable delays, economic conditions, government regulations and laws (including interpretation thereof), competitive bidding, and market conditions or other factors affecting such estimates or projections, Burns & McDonnell does not guarantee the accuracy of its estimates or predictions.

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COUNCIL BILL NO. 2019-161 ORDINANCE NO.

AN ORDINANCE amending Chapter 118, Utilities, Article II, Sewers and Sewage Disposal, Division 6 Rates and Charges, of the Joplin City Code, by repealing sections 118-201 through 118-202, inclusive, of Division 6 in their entirety and enacting new sections 118-201 through 118-202, inclusive of Divisions 6, Rates and Charges; dealing generally with the establishment of sewer rates for the City of Joplin, Missouri.

BE IT ORDAINED by the Council of the City of Joplin, Missouri, as follows:

WHEREAS, in 2014 the Council of the City of Joplin established a sewer rate based upon the cost of providing the sewer infrastructure and the cost of treating, on a per usage basis, the waste stream; and, for industrial and commercial users with additional surcharges for usage and waste water strength; and,

WHEREAS, the Council of the City of Joplin heard an engineering report regarding the proposed rates at the December 2, 2019 regular meeting of the Council; and,

WHEREAS, in 2019 the consulting firm of Burns and McDonnell have reviewed the City's wastewater treatment system and have provided rate recommendations; and,

WHEREAS, the rates increase each year, 2020 through 2024; and,

WHEREAS, only those residential, commercial, industrial and governmental persons or entities utilizing the system will be responsible for payment of sewer fees; and,

WHEREAS, the rate charged to out-of-town users is higher, in part, because those users do not bear the potential liability associated with a wastewater treatment system that City residents may incur; and,

WHEREAS, the Council of the City of Joplin has determined that the rate structure proposed is the most equitable way to balance the cost maintaining an environmentally compliant and effective sewerage system.

NOW, THEREFORE, BE IT ORDAINED BY THE COUNCIL OF THE CITY OF JOPLIN, MISSOURI, as follows:

Section 1. That Sections 118-201 through 118-202, inclusive, of Division 6. Rates and Charges. of Division II. Sewers and Sewage Disposal. of Chapter 118. Utilities. of the Joplin City Code, are hereby repealed in their entirety, and a new Division 6. Rates and Charges., Sections 118-201 through 118-202 are hereby enacted in lieu thereof, to read as follows:

DIVISION 6. RATES AND CHARGES

Sec. 118-201. Generally.

Sewer service charges are hereby levied against every residential, commercial, industrial and governmental user connected to public sewers in accordance with the rate recommendation documented in the 2019 Burns and McDonnell rate study, said rate study is incorporated herein by reference as Appendix 1. The proceeds of such charges so derived will be used first, for the purpose of retiring the debt for the public wastewater treatment works and then for the purpose of operation, maintaining and replacing the sewer system and equipment.

Sec. 118-202. Rates and surcharges.

(a.) All residential, commercial, industrial and governmental establishments shall be charged for sewer service in accordance with the following rate table. The sewer service charge shall consist of a monthly facility charge based upon the size of water meter plus a charge based upon the gallons of water used per month. The charges shall become effective on the dates listed in the table. The rate effective on April 1, 2020, shall be effective thereafter until changed.

RATE TABLE I
3/4 Inch Meter or Smaller

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	31.56	41.03	2.07	2.69
April 1, 2020	33.14	43.08	2.17	2.82
January 1, 2021	34.80	45.23	2.28	2.96
January 1, 2022	36.54	47.49	2.39	3.11
January 1, 2023	38.37	49.86	2.51	3.27
January 1, 2024	40.29	52.35	2.64	3.43

1 Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	40.51	52.66	2.07	2.69
April 1, 2020	42.54	55.29	2.17	2.82
January 1, 2021	44.67	58.05	2.28	2.96
January 1, 2022	46.90	60.95	2.39	3.11
January 1, 2023	49.25	64.00	2.51	3.27
January 1, 2024	51.71	67.20	2.64	3.43

1 ½ Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City

Present Rate	62.94	81.82	2.07	2.69
April 1, 2020	66.09	85.91	2.17	2.82
January 1, 2021	69.39	90.21	2.28	2.96
January 1, 2022	72.86	94.72	2.39	3.11
January 1, 2023	76.50	99.46	2.51	3.27
January 1, 2024	80.33	104.43	2.64	3.43

2 Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	89.92	116.77	2.07	2.69
April 1, 2020	94.31	122.61	2.17	2.82
January 1, 2021	99.03	128.74	2.28	2.96
January 1, 2022	103.98	135.18	2.39	3.11
January 1, 2023	109.18	141.94	2.51	3.27
January 1, 2024	114.64	149.04	2.64	3.43

3 Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	152.56	198.33	2.07	2.69
April 1, 2010	160.19	208.25	2.17	2.82
January 1, 2021	168.20	218.66	2.28	2.96
January 1, 2022	176.61	229.59	2.39	3.11
January 1, 2023	185.44	241.07	2.51	3.27
January 1, 2024	194.71	253.12	2.64	3.43

4 Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	242.13	314.77	2.07	2.69
April 1, 2020	254.24	330.51	2.17	2.82

January 1, 2021	266.95	347.04	2.28	2.96
January 1, 2022	280.30	364.39	2.39	3.11
January 1, 2023	294.32	382.61	2.51	3.27
January 1, 2024	309.04	401.74	2.64	3.43

6 Inch Meter

EFFECTIVE DATE	FACILITY CHARGE PER MONTH		VOLUME CHARGE PER 1000 GAL.	
	In City	Out of City	In City	Out of City
Present Rate	466.20	606.06	2.07	2.69
April 1, 2020	489.51	636.36	2.17	2.82
January 1, 2021	513.99	668.18	2.28	2.96
January 1, 2022	539.69	701.59	2.39	3.11
January 1, 2023	566.67	736.67	2.51	3.27
January 1, 2024	595.00	773.50	2.64	3.43

(b.) A surcharge rate is established for each user which discharges wastewater into the city treatment works which contains excess strength biochemical oxygen demand (BOD) and total suspended solids (TSS.) Excess strength BOD and TSS are defined as wastewater with a BOD concentration in excess of 2.5 lb/l,000 gallons or a TSS concentration in excess of 2.5 lb/l,000 gallons. Surcharges for BOD and TSS shall be paid at the rates established in Rate Table II, and shall be paid in addition to the normally established rates listed in Rate Table I. The charges shall become effective on the dates listed in the table and shall be applicable through the subsequent year. The rate effective on April 1, 2019 shall be effective thereafter until changed.

RATE TABLE II

EFFECTIVE DATE	BOD SURCHARGE RATE PER POUND		SS SURCHARGE RATE PER POUND	
	In City	Out of City	In City	Out of City
Present Rate	0.87	1.13	0.53	0.69
April 1, 2020	0.91	1.19	0.56	0.72
January 1, 2021	0.96	1.25	0.59	0.76
January 1, 2022	1.01	1.31	0.62	0.80
January 1, 2023	1.06	1.38	0.65	0.84

January 1, 2024	1.11	1.45	0.68	0.88

(c) In addition to any fee or surcharge described hereinabove, any user which discharges any toxic pollutants which cause an increase in the cost of managing the effluent or sludge from the city's treatment works, or any user which discharges any substance which singly or by interaction with other substances causes identifiable increases in the cost or operation, maintenance, or replacement of the treatment works, shall pay for such increased costs. The charge to each user shall be as determined by the responsible plant operating personnel and approved by the city council.

Passed by the Council of the City of Joplin, Missouri, this _____ day of _____, 2019.

_____

ATTEST: Gary L. Shaw, Mayor

_____

Barbara J. Gollhofer, City Clerk

APPROVED AS TO FORM:

_____

Peter C. Edwards, City Attorney