FINAL REPORT

City of Kalama
Water, Sewer, and Stormwater Rate Study

December 2020

December 30, 2020

Ms. Coni McMaster
City Clerk / Treasurer
City of Kalama
P.O. Box 1007
Kalama, WA 98625

Subject: Comprehensive Water, Sewer, and Stormwater Rate Study Final Report

Dear Ms. McMaster:

HDR Engineering, Inc. (HDR) is pleased to present to the City of Kalama (City) the final report for the 2020 comprehensive water, sewer, and stormwater rate study. The City's comprehensive study was developed to provide a financial plan and rates for each utility that generate sufficient revenue to fund the operating and capital needs. More specifically, the study was designed to develop cost-based and equitable rates for the City's water, sewer, and stormwater customers. This report outlines the overall approach used to achieve these objectives, along with the study findings, conclusions, and recommendations.

The City owns, operates, and maintains the water, sewer, and stormwater systems. The City utilizes ground water and surface water along with 12 reservoirs and 11 booster pump stations to supply their customer's water needs. The City also conveys and treats all sewer and stormwater generated in the City's service area. The costs associated with providing water, sewer, and stormwater services to the City's customers has been developed based on the provided information from the City and is included within the development of the proposed rates. This study was developed utilizing industry recognized generally accepted rate setting principles and methodologies. This report provides the basis for developing and implementing water, sewer, and stormwater rates which are cost-based, equitable, and legally defensible to the City's customers.

We appreciate the assistance provided by the City's project team in the development of this study. More importantly, HDR appreciates the opportunity to provide these technical and professional services to the City of Kalama.

Sincerely yours,
HDR Engineering, Inc.

Shawn Koorn
Associate Vice President

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Table of Contents

Table of Contents i

Executive Summary 1

Introduction 1

Overview of the Rate Study Process 1

Key Rate Study Results 2

Summary of the Water Revenue Requirement Analysis 3

Summary of the Water Cost of Service Analysis 5

Summary of the Water Rate Designs 6

Summary of the Wastewater Revenue Requirement Analysis 7

Summary of the Wastewater Cost of Service Analysis 10

Summary of the Wastewater Rate Designs 10

1 Introduction & Overview 16

1.1 Introduction 16

1.2 Goals and Objectives 16

1.3 Overview of the Rate Study Process 16

1.4 Organization of the Study 17

1.5 Summary 17

2 Overview of Rate Setting Principles 18

2.1 Introduction 18

2.2 Generally Accepted Rate Setting Principles 18

2.3 Determining the Revenue Requirement 18

2.4 Analyzing Cost of Service 19

2.5 Designing Utility Rates 20

2.6 Economic Theory and Rate Setting 20

2.7 Summary 20

3 Development of the Water Analysis 21

3.1 Water Revenue Requirement 21

3.1.1 Determining the Water Revenue Requirement 21

3.1.2 Establishing a Time Frame and Approach 21

3.1.3 Projecting Rate and Other Miscellaneous Revenues 22

3.1.4 Projecting Operation and Maintenance Expenses 23

3.1.5 Projection of Transfers ..... **Error! Bookmark not defined.**

3.1.6 Projecting Capital Funding Needs 24

3.1.7 Projection of Debt Service 26

3.1.8 Reserve Funding 26

3.1.9 Summary of the Revenue Requirement 26

3.1.10 Reserve Fund Levels 27

3.1.11 Revenue Requirement Summary....28
3.2 Water Cost of Service....29
3.2.1 Objectives of a Cost of Service Study....29
3.2.2 Determining the Customer Classes of Service....30
3.2.3 General Cost of Service Procedures....30
3.2.4 Development of Allocation Factors....32
3.2.5 Functionalization and Allocation of Plant in Service....33
3.2.6 Functionalization and Allocation of Operating Expenses....34
3.2.7 Major Assumptions of the Cost of Service Study....35
3.2.8 Summary Results of the Cost of Service Analysis....35
3.2.9 Consultant's Conclusions and Recommendations....37
3.2.10 Summary of the Cost of Service Analysis....37
3.3 Water Rate Design....37
3.3.1 Rate Design Criteria and Considerations....37
3.3.2 Development of Cost-Based Water Rates....38
3.3.3 Determination of Sizing and Number of Tiers....**Error! Bookmark not defined.**
3.3.4 Establishing the Cost-Basis for Pricing Tiers....**Error! Bookmark not defined.**
3.3.5 Development of the Unit Costs for Rate Designs**Error! Bookmark not defined.**
3.3.6 Summary of the Present and Proposed Water Rates....38
3.3.7 Summary of the Proposed Rate Revenues....**Error! Bookmark not defined.**
3.4 Water Rate Study Recommendations....40
3.5 Summary of the Water Rate Study....40
4 Development of the Wastewater Analysis 41
4.1 Wastewater Revenue Requirement....41
4.1.1 Determining the Revenue Requirement....41
4.1.2 Establishing a Time Frame and Approach....41
4.1.3 Projecting Rate and Other Miscellaneous Revenues....42
4.1.4 Projecting Operation and Maintenance Expenses....42
4.1.5 Projection of Transfers....**Error! Bookmark not defined.**
4.1.6 Projecting Capital Funding Needs....43
4.1.7 Projection of Debt Service....45
4.1.8 Reserve Funding....45
4.1.9 Summary of the Wastewater Revenue Requirement....45
4.1.10 Consultant's Conclusions....47
4.1.11 Summary of the Wastewater Revenue Requirement....47
4.2 Wastewater Cost of Service....47
4.2.1 Objectives of a Cost of Service Study....47
4.2.2 Determining the Customer Classes of Service....48
4.2.3 General Cost of Service Procedures....48
4.2.4 Summary of the Wastewater Cost of Service Analysis....50
4.2.5 Consultant's Conclusions and Recommendations....52
4.2.6 Summary of the Wastewater Cost of Service Analysis....52
4.3 Wastewater Rate Design....52

4.3.1 Rate Design Criteria and Considerations.....52
4.3.2 Development of Cost-Based Wastewater Rates. **Error! Bookmark not defined.**
4.3.3 Overview of the Current Wastewater Rate Structure.....53
4.3.4 Overview of the Proposed Rate Adjustments..... **Error! Bookmark not defined.**
4.3.5 Overview of the Proposed Wastewater Rate Structure .... **Error! Bookmark not defined.**
4.3.6 Summary of the Wastewater Rates..... **Error! Bookmark not defined.**
4.4 Summary of the Wastewater Rate Design.....54

Water Technical Appendix

Sewer Technical Appendix

Stormwater Technical Appendix

Executive Summary

Introduction

HDR was retained by the City of Kalama (City) to conduct a comprehensive water, sewer, and stormwater rate study (Study). The main objectives of the Study were:

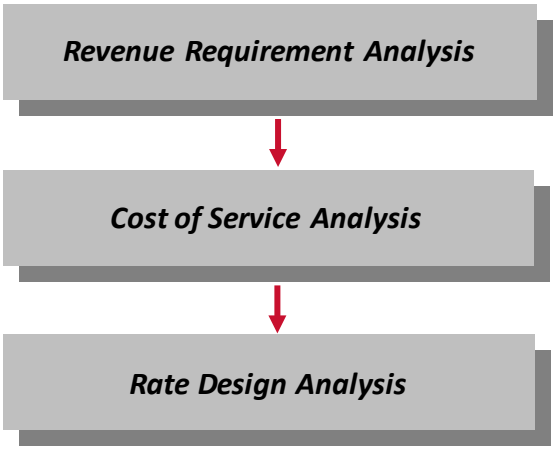
- Develop a projection of water, sewer, and stormwater revenues to support the City's operating and capital costs of each utility
- Provide a proportional and equitable allocation of the costs for providing water, sewer, and stormwater service to the City's customers
- Propose cost-based and equitable water, sewer, and stormwater rates for a multi-year time period

The City owns, operates, and maintains the water, sewer and stormwater systems. The City utilizes ground water under surface water along with 12 reservoirs and 11 booster pump stations to supply their customer's water needs. The City also conveys and treats all sewer and stormwater generated in the City's service area. The costs associated with providing water, sewer, and stormwater services to the City's customers has been developed based on the provided information from the City and is included within the development of the proposed rates. This study was developed utilizing industry recognized generally accepted rate setting principles and methodologies. This report provides the basis for developing and implementing water, sewer, and stormwater rates which are cost-based, equitable, and legally defensible to the City's customers.

Overview of the Rate Study Process

A comprehensive rate study uses three interrelated analyses to address the adequacy and equity of each utility's rates. These three analyses are a revenue requirement analysis, a cost of service analysis, and a rate design analysis. These three analyses are illustrated below in Figure ES - 1.

Figure ES – 1
Overview of the Comprehensive Rate Analysis



Compares the revenues to the expenses of the utility to determine the overall revenue adjustment required

Equitably and proportionally allocates the revenue requirement to the various customer classes of service

Considers both the level and structure of the rate design to collect the target level of revenues

Key Rate Study Results

The Study technical analysis was developed based on the operating and maintenance (O&M) and capital costs necessary to provide water, sewer, and stormwater services to the City's customers. The analyses resulted in the following findings, conclusions, and recommendations.

- A revenue requirement analysis was developed for the projected time period of 2020 through 2025 for each utility on a stand-alone basis
- The City's 2020 adopted water, sewer, and stormwater budgets were used as the starting point of the analyses
- Operation and maintenance (O&M) expenses are projected to increase at inflationary levels with no assumed changes to levels of service or anticipated extraordinary expenses
- The proposed water revenue adjustments are 7.5% in 2021 and 2022 followed by 9.0% in 2023 through 2025, effective January 1 of each year
- The proposed sewer revenue adjustments are 5.5% in 2021 through 2025; effective January 1 of each year
- The proposed stormwater revenue adjustments are 9.5% annually from 2021 through 2025; effective January 1 of each year
- A cost of service analysis was developed to review the equity of the existing rates and to proportionately allocate the 2021 revenue requirement among the customer classes of service of each utility and customers within each class
- The Study has developed proposed rates for the 2021 – 2025 time period, for each utility, and for each customer class of service of each utility

Summary of the Water Revenue Requirement Analysis

The City's water utility revenue requirement analysis is the first analytical step in the comprehensive water rate study process. The revenue requirement analysis determines the adequacy of the current water revenues to fund current and future costs related to both O&M and capital needs. From this analysis, a determination can be made as to the overall level of water rate revenue adjustments needed to provide adequate and prudent funding for the water utility.

For this Study, the revenue requirement was developed for the budgeted year 2020 and a projected time period of 2021 – 2030. However, the focus of the Study was on the next five-year rate setting period of 2021 – 2025. The revenue requirement analysis was developed using a "cash basis" approach. Under this approach the revenues of the utility must be sufficient to recover all cash needs including O&M expenses, taxes & transfers, rate funded capital, and annual debt service.

O&M expenses were projected using inflationary factors for the City's various expenses to provide water distribution, transmission, and treatment services over the projected time period starting with the adopted 2020 water budget. The inflationary factors were based on historical City increases in costs and estimated future inflationary impacts. The proper and adequate funding of capital projects is important to help minimize rate increases over time. General financial guidelines state that, at a minimum, a utility should fund an amount equal to, or greater than, the annual depreciation expense through rates. The annual depreciation expense reflects the current investment in plant facilities in service being depreciated or "losing" their useful life. This portion of plant investment needs to be replaced to maintain the existing level of infrastructure (and service levels). Provided below in Table ES - 1 is a summary of the capital funding plan over the five-year rate setting period.

Table ES – 1
Summary of the Water Capital Funding Plan ($000)

	2020	2021	2022	2023	2024	2025
Total Capital Projects	$795	$1,207	$615	$3,342	$7,345	$3,775
Less: Other Funding	740	1,082	190	2,932	7,245	3,755
Total Rate Funded Capital	**$55**	**$125**	**$425**	**$410**	**$100**	**$20**

The annual depreciation expense is estimated at $420,000 for the water utility. This financial plan has placed the City's rate funded capital level for the water utility at $55,000 in 2020 which increases to an average of $216,000 per year over the rate setting period. The plan shows that the City is currently behind in annual renewal and replacement funding and needs to continue to increase rate funded capital. As the system continues to age, this will become more important for funding renewal and replacement projects and minimize the need for long-term borrowing, especially for annual renewal and replacement needs. The difference between annual capital improvement needs and rate funded capital in Table ES-1 is being funded through available (unrestricted) water reserves and long-term borrowing.

In addition to O&M and rate funding of capital renewal and replacement, the water utility incurs costs related to annual debt service payments on previous financing of capital improvements. The water utility currently has one (1) outstanding long-term debt issuance – the PWTF/2001 - which retires in 2021. As noted in the capital funding approach, it is assumed that the water utility will need to fund capital projects from long-term debt over the rate setting period. The funding analysis has identified approximately $13.5 million in additional long-term borrowing needs over the five-year time frame.

Given the above discussion of the components of the City's water revenue requirement, a projection of operating and capital expenses can be developed to determine the overall impact to water revenues necessary to maintain the water system. Provided below in Table ES - 2 is a summary of the revenue requirement analysis for the City's water utility.

Table ES - 2
Summary of the Water Revenue Requirement Analysis ($000)

	2020	2021	2022	2023	2024	2025
Revenue						
Rate Revenues	$1,618	$1,651	$1,684	$1,717	$1,752	$1,787
Non-Operating Revenues	220	234	249	269	290	312
Total Revenue	**$1,839**	**$1,885**	**$1,933**	**$1,986**	**$2,041**	**$2,099**
Expenses						
Total O & M	$1,079	$1,113	$1,149	$1,187	$1,225	$1,265
Rate Funded Capital	55	125	425	410	100	20
Taxes & Transfers	485	501	525	553	583	616
Net Debt Service	220	238	19	222	762	1,045
Reserve Funding	1	25	63	38	(8)	(3)
Total Expenses	**$1,839**	**$2,003**	**$2,182**	**$2,410**	**$2,662**	**$2,942**
Bal. / (Def.) of Funds	$0	($124)	($262)	($446)	($653)	($887)
Bal. as a % of Rate Adj. Req'd	0.0%	7.5%	15.6%	26.0%	37.3%	49.7%
Proposed Revenue Adjustment	**0.0%**	**7.5%**	**7.5%**	**9.0%**	**9.0%**	**9.0%**
Add'l Revenue with Rate Adj.	$0	$124	$262	$446	$653	$887
Bal. / (Def.) After Rate Adj.	0	0	0	0	0	0

As can be seen, the revenue requirement has summed the O&M expense, rate funded capital, net debt service, and reserve funding. The total revenue requirement is then compared to the total revenues which include the rate revenues - at present rate levels - and other miscellaneous revenues. From this comparison, a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the current level of rate revenues to determine the level of adjustment needed to meet the revenue requirement. The "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over the Study time period, the total deficiency of rate revenue is 49.7%. A detailed discussion of the water revenue requirement is provided in Section 3.1 of this report.

Based on the revenue requirement analyses developed herein, HDR has concluded that the City will need to adjust the level of water rate revenues annually over the next five fiscal years (2021 – 2025). HDR has reached this conclusion for the following reasons:

- Annual rate adjustments are necessary to fund the water utility capital needs
- Adjustments are necessary to maintain prudent funding of annual renewal and replacement of the water system
- The proposed adjustments maintain the City's water utility's strong financial health (e.g., reserve levels, debt service coverage ratios) and provide long-term, sustainable funding levels

In reaching this conclusion, HDR recommends that the City adopt the proposed revenue adjustments for the water utility from 2021 through 2025. This is in order to provide sufficient funding for all the O&M and capital improvement needs over this Study time period. A detailed discussion of the development of the revenue requirement is provided in Section 3.1 of this report and the technical analysis is provided in Exhibit 1 through Exhibit 6 of the Water Technical Appendices.

Summary of the Water Cost of Service Analysis

A cost of service analysis determines the proportional and equitable allocation of the revenue requirement to the various water customer classes of service. The water cost of service analysis is based on generally accepted methodologies as outlined in the American Water Works Association M1 Manual, Principles of Water Rates, Fees, and Charges. For the City's Study, the revenue requirement for 2021 was used as the test year for the water utility in order to develop the cost of service analysis and develop the proposed water rates.

In summary form, the cost of service analysis began by functionalizing the revenue requirement. As explained in more detail in this report, the functionalized revenue requirement was then allocated to the various cost components. The individual allocation totals were then proportionally distributed to the various customer class of service based upon each customer class's use of or demand placed on each system (via the distribution factors). The allocated expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Table ES - 3 provides the summary of the cost of service analysis based on the water system specific costs and the City's water customer characteristics. The detailed cost of service analysis is provided in Exhibit 7 through Exhibit 18 of the Water Technical Appendices and further discussed in Section 3.2 of this report and in Exhibit 1 through Exhibit 6 of the Water Technical Appendices.

Table ES - 3 Summary of the Water 2021 Cost of Service Analysis ($000)				
Class of Service	Present Revenues	Allocated Costs	$ Difference	% Difference
Residential	$867	$986	($119)	13.8%
Multi-Family	51	43	8	-16.2%
Commercial / Industrial	733	745	(13)	1.7%
Total System	**$1,651**	**$1,775**	**($124)**	**7.5%**

The results of the cost of service analysis show differences between the customer classes of service. This is not uncommon given the nature of how customer water consumption patterns change over time. Additionally, this analysis is a snapshot in time and there are many other variables that can affect the results and that can change from year to year. Given the need for an overall adjustment to rate levels, no cost of service adjustments are recommended. A detailed discussion of the development of the cost of service analysis is provided in Section 3.2 of this report and in Exhibit 7 through Exhibit 18 of the Water Technical Appendices.

Summary of the Water Rate Designs

The third and final step of the comprehensive rate study process is the design of the water rates to collect the targeted levels of revenue, based on the results of the revenue requirement including any cost of service analysis recommendations. The revenue requirement analysis provided a set of recommendations related to annual revenue adjustments, while the cost of service results in the need to make interclass adjustments.

The City currently has three customer classes of service: Single Family, Multi-Family, and Commercial / Industrial. All customer classes are charged a fixed charge based on service meter size. For the consumption charge, all customer per hundred cubic feet (CCF) basis however, the level of rate is different by customer class. After reviewing the current rate structure with the City staff, it was determined that the current rate structure would be maintained, with the level of the proposed charge based on the overall revenue needs as identified in the revenue requirement analysis. Provided in Table ES – 4 is a summary of the present and proposed single family rates for the City's water utility.

Table ES - 4
Summary of the Present and Proposed Single Family Water Rates

	Present Rates	2021	2022	2023	2024	2025
Fixed Charge	***$ / Month***					
Inside	$10.70	$11.50	$12.36	$13.47	$14.68	$16.00
Outside	19.80	21.28	22.87	24.92	27.16	29.60
Volume Charge	***$ / CCF***					
Inside	$2.15	$2.31	$2.48	$2.70	$2.94	$3.20
Outside	3.98	4.27	4.59	5.00	5.44	5.92

Table ES – 4 shows that the current rate structure has been maintained and only the level of rates have also been adjusted in order to meet the revenue target calculated in the revenue requirement analysis. The proposed rates are projected to be effective January 1 of each year starting January 1, 2021. The development of the water rate designs and discussion of other customer classes are each outlined in detail in Section 3.3 of this report.

Summary of the Sewer Revenue Requirement Analysis

The City's sewer utility revenue requirement analysis is the first analytical step in the comprehensive sewer rate study process, just as was the case with the water utility. The revenue requirement analysis determines the adequacy of the current wastewater rates to fund current and future costs related to both O&M and capital needs. From this analysis, a determination can be made as to the overall level of sewer rate adjustments needed to provide adequate and prudent funding for the sewer utility.

The sewer revenue requirement was developed for the same time period as water, using the budgeted year 2020 and a ten-year projected time period (2021 – 2030). As a practical matter, a multi-year time frame is recommended in an attempt to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City may begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates. As with the water rate study, the focus of this study is on the next five-year period of 2021 through 2025.

For the sewer revenue requirement analysis, a "cash basis" approach was utilized much like water. The "cash basis" approach includes O&M expenses, taxes & transfers, rate funded capital, net debt service, and reserve funding. Budgeted O&M expenses were projected using inflationary factors for the City's various expenses to provide sewer collection, conveyance, treatment, and disposal services over the review period.

Given the development of the O&M projections for the projected time period, the next step is the development of the capital funding plan for the sewer utility. The proper and adequate funding of capital projects is important to help minimize rate increases over time. As noted in the

water discussion, general financial guidelines state that, at a minimum, a utility should fund an amount equal to, or greater than, the annual depreciation expense through rates. Provided below in Table ES - 5 is a summary of the current capital improvement plan for the sewer system and the level of rate funded capital over the rate setting period.

Table ES – 5
Summary of the Sewer Capital Funding Plan ($000)

	2020	2021	2022	2023	2024	2025
Total Capital Improvement Projects	$275	$340	$858	$3,056	$982	$954
Less: Other Funding	25	25	448	2,556	382	239
Rate Funded Capital	**$250**	**$315**	**$410**	**$500**	**$600**	**$715**

As a point of reference, the City's sewer utility annual depreciation expense is approximately $336,000 (2019). This financial plan has placed the City's rate funding for capital improvements at $250,000 in 2020 and increases over time to $715,000 by 2025. A more detailed discussion of the capital funding plan is included in Section 4.1 of this report and in Exhibit 4 of the Wastewater Technical Appendices.

At the current time, the sewer utility has one outstanding long-term debt payment for the wastewater treatment plant upgrade which is retired in 2027. In addition, it is projected that the City will need additional long-term to fund the treatment plant expansion in 2026.

Given a projection of O&M and capital expenses, a summary of the sewer revenue requirement analysis was developed. Provided below in Table ES - 6 is a summary of the revenue requirement analysis for the City's sewer utility.

Table ES - 6
Summary of the Sewer Revenue Requirement Analysis ($000)

	2020	2021	2022	2023	2024	2025
Revenues						
Rate Revenues	$1,624	$1,656	$1,689	$1,723	$1,757	$1,793
Other Revenues	179	189	199	210	221	233
Total Revenues	**$1,803**	**$1,845**	**$1,888**	**$1,933**	**$1,979**	**$2,026**
Expenses						
Total O & M	$908	$899	$928	$958	$989	$1,023
Taxes & Transfers	347	372	388	404	421	438
Net Debt Service	250	315	410	500	600	715
Rate Funded Capital	295	295	295	295	295	295
To/(From) Reserves	2	54	58	76	93	105
Total Expenses	**$1,803**	**$1,936**	**$2,079**	**$2,233**	**$2,398**	**$2,576**
Bal./(Def.) of Funds	$0	($91)	($191)	($300)	($420)	($550)
Bal. as a % of Rate Rev.	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%
Proposed Revenue Adjustment	**0.0%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**
Add'l Rev. from Adjustment	$0	$91	$191	$300	$420	$550
Total Bal./(Def.) of Funds	$0	$0	($0)	($0)	$0	$0

As can be seen, the revenue requirement has summed the O&M expense, taxes and transfers, rate funded capital, net debt service, and reserve funding. The total revenue requirement is then compared to the total sources of funds which include the sewer rate revenues, at present rate levels, and other miscellaneous revenues. From this comparison, a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the current level of rate revenues to determine the level of revenue adjustment needed to meet the revenue requirement. The "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over this Study time period, the total deficiency of sewer rate revenue is 30.7%.

Based on the revenue requirement analysis developed herein, HDR has concluded that the City will need to adjust the level of sewer revenues received over the next five fiscal years (2021 – 2025). HDR has reached this conclusion for the following reasons:

- Adjustments are necessary to fund the City's capital needs
- Adjustments are necessary to maintain prudent funding of annual renewal and replacement of the sewer utility system
- The proposed adjustments maintain the City's strong financial health (e.g., debt service coverage ratios, reserves) and provide long-term, sustainable funding levels for the City

In reaching this conclusion, HDR recommends that the City adopt the proposed revenue adjustments for 2021 through 2025 to provide sufficient funding for all the O&M and capital

improvement needs over this Study time period. A detailed discussion of the development of the sewer revenue requirement is provided in Section 4.1 of this report.

Summary of the Sewer Cost of Service Analysis

A cost of service analysis determines the equitable and proportional allocation of the revenue requirement to the various customer classes of service. For the City's study, the sewer revenue requirement for 2021 was used for establishing the cost of service analysis.

In summary form, the cost of service analysis began by functionalizing the revenue requirement for the sewer system. As explained in more detail in this report, the functionalized revenue requirement was then classified into their various cost components as outlined in the Water Environment Federation Manual of Practice Number 27, Financing and Charges for Wastewater Systems. The individual functional classification totals were then equitably and proportionately allocated to the various customer class of service based upon each customer class's use of or demand placed on the system. The allocated expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Table ES - 7 provides the summary of the cost of service analysis completed for the City's sewer utility customers. The development of the sewer cost of service is detailed in Section 4.2 of this report and Exhibits 6 through 15 of the Sewer Technical Appendices.

Table ES - 7
Summary of the Sewer Cost of Service Analysis ($000)

Class of Service	Current Revenues	Allocated Costs	$ Difference	% Difference
Residential	$858	$882	($24)	2.8%
Multi-Family	284	303	(19)	6.7%
Com / Ind	513	561	(48)	9.4%
Total	**$1,656**	**$1,747**	**($91)**	**5.5%**

The results of the cost of service analysis indicate very minor cost differences between the customer classes of service. It is important to note that the results of a cost of service analysis are a snapshot in time and can vary from year to year based on a number of variable. It is often recommended to review multiple cost of service analyses before any interclass adjustments are proposed. A detailed discussion of the development of the cost of service analysis is provided in Section 4.2 of this report.

Summary of the Sewer Rate Designs

The final step of the comprehensive rate study process is the design of the sewer rates to collect the desired levels of revenue, based on the results of the revenue requirement and cost of service analyses. The revenue requirement analysis provided a set of recommendations related to

annual revenue adjustments, while incorporating the cost of service results and implementing interclass adjustments.

The City currently has a rate structure for each of the customer classes of service. For residential customers - single-family and multi-family - a monthly flat rate is charged on a per unit basis with a different charge specific to each class. The commercial / industrial customer class are charged a fixed charge based on the size of water service meter. All customers are charged the same consumption charge in one hundred cubic feet (CCF). It is important to note that residential customers are charged based on the winter water average for consumption in the summer up to the cap. At this time, no rate structure changes have been recommended. The current rates have been adjusted in order to meet the revenue requirement for the sewer utility. Provided in Table ES – 8 is a summary of the present and proposed sewer rates.

Table ES – 8
Summary of the Present and Proposed Sewer Rates

	Present Rates	2021	2022	2023	2024	2025
Fixed Charge						
Residential	$55.95	$59.03	$62.27	$65.70	$69.31	$73.12
Multi-Family	48.70	51.38	54.21	57.19	60.33	63.65
Com / Ind						
3/4"	$66.00	$69.63	$73.46	$77.50	$81.76	$86.26
3/4"(Out)	66.00	69.63	73.46	77.50	81.76	86.26
1"	82.00	86.51	91.27	96.29	101.59	107.18
1.5"	186.00	196.23	207.02	218.41	230.42	243.09
2"	270.00	284.85	300.52	317.05	334.49	352.89
3"	495.00	522.23	550.95	581.25	613.22	646.95
4"	750.00	791.25	834.77	880.68	929.12	980.22
10"	1,100.00	1,160.50	1,224.33	1,291.67	1,362.71	1,437.66
Consumption Charge						
All Customers	$8.70	$9.18	$9.68	$10.21	$10.77	$11.36

The proposed rates are increased by the annual revenue requirement adjustment and no change in rate structure is recommended at this time. The development of the rate designs is outlined in detail in Section 4.3 of this report.

Summary of the Stormwater Revenue Requirement Analysis

Just as with the City's water and sewer utilities, the revenue requirement analysis is the first analytical step in the rate study process. The revenue requirement analysis determines the adequacy of the current stormwater revenues to fund O&M and capital needs. Based on the results of this analysis, the overall level of stormwater rate revenue adjustments can be calculated.

For this Study and in keeping the same structure as water and sewer, the revenue requirement was developed for the budgeted year 2020 and a projected time period of 2021 – 2030. Again, the multi-year time frame is recommended for the approach in order to identify major expenses in the future and to begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

For the revenue requirement analysis, a "cash basis" approach was utilized just as with the water and sewer utilities for the City's Study. Under this approach the revenues of the utility must be sufficient to recover all cash needs including O&M expenses, taxes & transfers, rate funded capital, and debt service.

Budgeted O&M expenses were projected using inflationary factors for the City's various expenses to provide stormwater collection, conveyance, and treatment services. The inflationary factors were based on historical City increases in costs and estimated future inflationary impacts. With the projection of O&M completed the focus shifts to the development of the capital funding plan for the stormwater utility.

As mentioned in water and sewer, the proper and adequate funding of capital projects is important to help minimize rate increases over time. A utility should fund an amount equal to, or greater than, the annual depreciation expense through rates on an annual basis. Provided below in Table ES - 9 is a summary of the capital funding plan over the five-year rate setting period.

Table ES – 9
Summary of the Stormwater Capital Funding Plan ($000)

	2020	2021	2022	2023	2024	2025
Total Capital Projects	$75	$30	$100	$0	$70	$75
Less: Other Funding	75	20	0	0	0	0
Total Rate Funded Capital	**$0**	**$10**	**$100**	**$0**	**$70**	**$75**

This financial plan has placed the City's rate funded capital level for the stormwater utility at $10,000 in 2021 which increases to $75,000 by 2025. The plan shows that the City is attempting to move towards adequate funding levels for renewal and replacement funding needs as the utility matures.

In addition to O&M and rate funding of capital renewal and replacement, the water utility incurs costs related to annual debt service payments on previous financing of capital improvements. The stormwater utility currently has one (1) outstanding interfund loan from the Sewer I&I fund. The annual payment is $70,000 and goes through 2022. It is assumed that the City's stormwater utility will not need to fund capital projects from long-term debt over the rate setting period.

Given the above discussion of the components of the City's stormwater revenue requirement, a projection of operating and capital expenses can be developed to determine the overall impact to stormwater revenues necessary to maintain the utility system. Provided in Table ES - 10 is a summary of the revenue requirement analysis for the City's stormwater utility.

Table ES - 10
Summary of the Stormwater Revenue Requirement Analysis ($000)

	2020	2021	2022	2023	2024	2025
Revenue						
Rate Revenues	$120	$122	$125	$127	$130	$132
Non-Operating Revenues	1	1	1	1	1	1
Total Revenue	**$121**	**$123**	**$125**	**$128**	**$130**	**$133**
Expenses						
Total O & M	$60	$82	$85	$87	$90	$93
Rate Funded Capital	2	2	2	2	2	2
Taxes & Transfers	0	10	100	0	70	75
Net Debt Service	70	70	70	0	0	0
Reserve Funding	(11)	(29)	(107)	78	24	38
Total Expenses	**$121**	**$134**	**$150**	**$167**	**$186**	**$208**
Bal. / (Def.) of Funds	$0	($12)	($25)	($40)	($57)	($76)
Bal. as a % of Rate Adj. Req'd	0.0%	9.5%	19.9%	31.3%	43.8%	57.4%
Proposed Revenue Adjustment	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**
Add'l Revenue with Rate Adj.	$0	$12	$25	$40	$57	$76
Bal. / (Def.) After Rate Adj.	0	0	0	0	0	0

As can be seen, the revenue requirement has summed the O&M expense, rate funded capital, taxes and transfers, net debt service, and reserve funding. The total revenue requirement is then compared to the total revenues which include the rate revenues - at present rate levels - and other miscellaneous revenues. The "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over this Study time period, the total deficiency of rate revenue is 57.4%.

Based on the revenue requirement analyses developed, HDR has concluded that the City will need to adjust the level of stormwater rate revenues received over the next five fiscal years (2021 – 2025). HDR has reached this conclusion for the following reasons:

- Adjustments are necessary to fund the stormwater utility capital needs
- Adjustments are necessary to maintain prudent funding of annual renewal and replacement of the stormwater system
- The proposed adjustments maintain the City's stormwater utility's strong financial health (e.g., reserve levels, debt service coverage ratios) and provide long-term, sustainable funding levels

In reaching this conclusion, HDR recommends that the City adopt the proposed revenue adjustments for the stormwater utility from 2021 through 2025. This is in order to provide sufficient funding for all the O&M and capital improvement needs over this Study time period. A detailed discussion of the development of the revenue requirement is provided in Section 5.1 of this report and the technical analysis is provided in Exhibit 1 through Exhibit 6 of the Stormwater Technical Appendices.

Summary of the Stormwater Cost of Service Analysis

A cost of service analysis determines the proportional and equitable allocation of the revenue requirement to the various customer classes of service. For the stormwater utility, the cost of service analysis is abbreviated given that there are no customer classes of service as all customers are charged on an equivalent stormwater unit (ESU). The calculation is then the total revenue requirement less the miscellaneous revenues and divided by the total number of ESUs. For the City's Study, the revenue requirement for 2021 was used as the 'test year' in order to develop the cost of service analysis. A detailed discussion of the development of the cost of service analysis is provided in Section 5.2 of this report.

Summary of the Stormwater Rate Designs

The third and final step of the comprehensive rate study process is the design of the stormwater rates to collect the targeted levels of revenue, based on the results of the revenue requirement including any cost of service analysis based changes. The revenue requirement analysis provided a set of recommendations related to annual revenue adjustments, while the cost of service results developed the unit cost per ESU.

Given the result of the prior analyses – the revenue requirement and cost of service – the proposed rates can be developed. The proposed rates were designed to reflect the proportional allocation of the costs of providing service to each customer class. Provided in Table ES – 11 is a summary of the present and proposed rates for the City's stormwater utility.

Table ES - 11
Summary of the Present and Proposed Stormwater Rates

	Present Rates	2021	2022	2023	2024	2025
	$ / ESU					
All Customers	$5.60	$6.13	$6.71	$7.35	$8.05	$8.81

Table ES – 11 shows that the current rate structure has been maintained and only the level of rates have also been adjusted in order to meet the revenue target calculated in the revenue requirement analysis.

The development of the stormwater rate designs and discussion of other customer classes are each outlined in detail in Section 5.3 of this Study.

Summary of the Water, Sewer, and Stormwater Rate Study

The adequacy of the City's water, sewer, and stormwater rates were reviewed by HDR. Based upon the analyses developed herein, which included the budgeted operating and capital expenses, HDR has proposed a comprehensive set of recommendations for each utility. The following sections of the report provide a more detailed discussion of the technical analyses undertaken, along with the findings, conclusions and recommendations of the study.

1 Introduction & Overview

1.1 Introduction

HDR was retained by the City of Kalama (City) to conduct a comprehensive water, sewer, and stormwater rate study (Study). The objective of the rate study was to review the City's operating and capital costs in order to develop a projection of cost-based and equitable rates for the water, sewer, and stormwater utility customers.

The City owns and operates the water, sewer, and stormwater systems. The costs associated with providing these services to customers has been developed based on City provided information and included within the development of the proposed rates.

1.2 Goals and Objectives

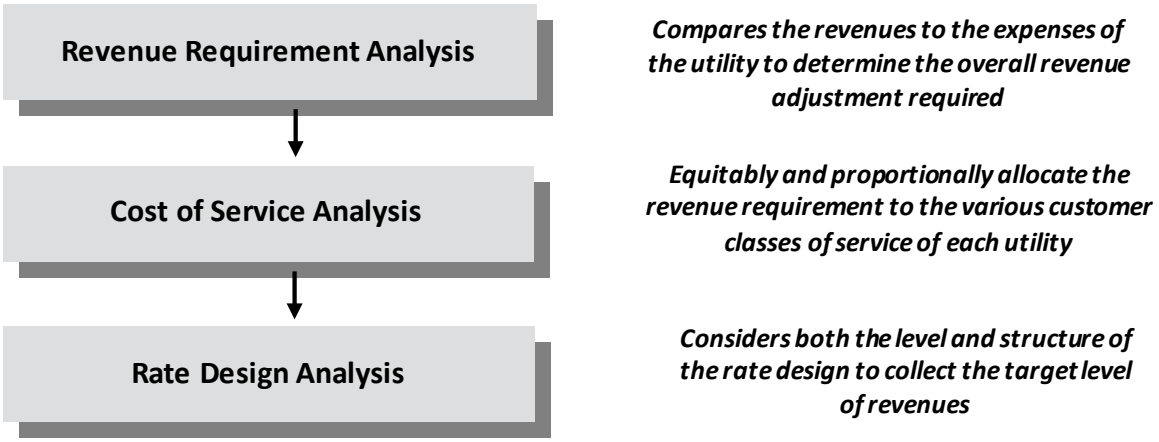
The City had a number of key objectives in developing the water, sewer, and stormwater rate study. These key objectives provided a framework for policy decisions in the analysis that follows. These key objectives were as follows:

- Develop the Study in a manner that is consistent with industry standard principles and methodologies (i.e., American Water Works Association, Water Environment Federation)
- In financial planning and establishing the City's rates, review and utilize best industry practices, while recognizing and acknowledging the specific and unique characteristics of the City's utilities
- Review the City's rates utilizing "generally accepted" rate making methodologies to determine adequacy and equity of the utility rates.
- Meet the financial planning criteria and goals of the City. For example debt service coverage ratios, adequate funding of capital infrastructure, and maintenance of adequate and prudent reserve levels
- Develop a final proposed financial plan which adequately supports the utility's funding requirements, while attempting to minimize overall impacts to rates
- Develop a proportional and equitable distribution of costs to the City's utility customers

1.3 Overview of the Rate Study Process

User rates must be set at a level where a utility's operating and capital expenses are met with the revenues received from customers. This is an important point, as failure to achieve this objective may lead to insufficient funds to maintain system integrity. To evaluate the adequacy of the water, sewer, and stormwater rates, each on a standalone basis, a comprehensive rate study is often performed. A comprehensive rate study consists of three interrelated analyses. Figure 1 – 1 provides an overview of these analyses.

Figure 1 – 1
Overview of the Comprehensive Rate Analyses



The above framework for reviewing and evaluating rates was utilized for the City's water, sewer and stormwater utilities.

1.4 Organization of the Study

This report is organized in a sequential manner that first provides an overview of utility rate setting principles, followed by sections that detail the specific steps used to review the City's utility rates. The following sections comprise the City's water, sewer, and stormwater rate study report:

- **Section 2** – Overview of Rate Setting Principles
- **Section 3** – Development of the Water Rate Study
- **Section 4** – Development of the Sewer Rate Study
- **Section 5** – Development of the Stormwater Rate Study

Technical Appendices are attached at the end of this report, which detail the various technical analyses that were undertaken in the preparation of this study.

1.5 Summary

This report will review the comprehensive water, sewer, and stormwater rate study prepared for the City of Kalama. This report has been prepared utilizing generally accepted and industry standard rate setting methodologies and approaches.

2 Overview of Rate Setting Principles

2.1 Introduction

This section of the report provides background information about the rate setting process, including descriptions of generally accepted principles, types of utilities, methods of determining a revenue requirement, the cost of service analysis, and rate design. This information is useful for gaining a better understanding of the details presented in Sections 3 through 5 of this report.

2.2 Generally Accepted Rate Setting Principles

As a practical matter, all utilities should consider setting their rates around some generally accepted or global principles and guidelines. Utility rates should be:

- Cost-based, equitable, and set at a level that meets the utility's full revenue requirement
- Easy to understand and administer
- Designed to conform to "generally accepted" rate setting techniques
- Stable in their ability to provide adequate revenues for meeting the utility's financial, operating, and regulatory requirements
- Established at a level that is stable from year-to-year from a customer's perspective

2.3 Determining the Revenue Requirement

Most public utilities use the "cash basis" approach for establishing their revenue requirement and setting rates. This approach conforms to most public utility budgetary requirements and the calculation is easy to understand. A public utility totals its cash expenditures for a period of time to determine required revenues. The revenue requirement for a public utility is usually comprised of the following costs or expenses:

- **Total Operating Expenses:** This includes a utility's operation and maintenance (O&M) expenses, plus any applicable taxes or transfer payments. Operation and maintenance expenses include the materials, electricity, labor, supplies, etc., needed to keep the utility functioning.
- **Total Capital Expenses:** Capital expenses are calculated by adding debt service payments (principal and interest) to capital improvements financed with rate revenues. In lieu of including capital improvements financed with rate revenues, a utility sometimes includes depreciation expense to stabilize the annual revenue requirement.

Under the "cash basis" approach, the sum of the total O&M expenses plus the total capital expenses equals the utility's revenue requirement during any selected period of time (historical or projected).

Note that the two portions of the capital expense component (debt service and rate funded capital) are necessary under the cash basis approach because utilities generally cannot finance

all their capital facilities with long-term debt. At the same time, it is often difficult to pay for capital expenditures on a "pay-as-you-go" basis given that some major capital projects may have significant rate impacts upon a utility, even when financed with long-term debt. Many utilities have found that some combination of pay-as-you-go funding and long-term financing will often lead to minimization of rate increases over time.

Public utilities typically use the "cash basis"[1] approach to establish their revenue requirements. An exception occurs if a public utility provides service to a large wholesale or contract customer. In this situation, a public utility could use the "utility basis" approach (see Table 2 - 1) regarding earning a fair return on its investment.

Table 2 – 1
Cash versus Utility Basis Comparison

	Cash Basis		Utility Basis (Accrual)
+	O&M Expenses	+	O&M Expenses
+	Taxes/Transfer Payments	+	Taxes/Transfer Payments
+	Rate Funded Capital	+	Depreciation Expense
+	Debt Service (Principal + Interest)	+	Return on Investment
=	**Total Revenue Requirement**	=	**Total Revenue Requirement**

2.4 Analyzing Cost of Service

After the total revenue requirement is determined, it is equitably allocated to the users of the service. The allocation, usually analyzed through a cost of service analysis, reflects the cost relationships for providing water, sewer, and stormwater services. A cost of service analysis requires three analytical steps:

1. Costs are ***functionalized*** or grouped into the various cost categories related to providing service. For water this typically includes supply, treatment, distribution, pumping, etc. For a sewer this generally includes collection, pumping, and treatment. This step is largely accomplished by the utility's accounting system.
2. The functionalized costs are then ***allocated*** to specific cost components. Allocation refers to the arrangement of the functionalized data into cost components. For example, a utility's water costs are typically allocated as average day, peak day, or customer-related.

[1] "Cash basis" as used in the context of rate setting is not the same as the terminology used for accounting purposes and recognition of revenues and expenses. As used for rate setting, "cash basis" simply refers to the specific cost components to be included within the revenue requirement analysis.

For sewer the manuals discuss the classification of costs, which includes volume, strength, and customer related.

3. Once the costs are allocated into components, they are proportionally ***distributed*** to the customer classes of service. The distribution is based on each customer class's relative contribution to the cost component (i.e., benefits received from and burdens placed on the system and its resources). For example, customer-related costs are distributed to each class of service based on the total number of customers in that class of service. Once costs are distributed, the revenues from each customer class of service required to achieve cost-based rates can be determined.

2.5 Designing Utility Rates

Rates that meet the utility's objectives are designed based on both the revenue requirement and the cost of service analysis. This approach results in rates that are strictly cost-based and does not consider other non-cost based goals and objectives (conservation, economic development, ability to pay, revenue stability, etc.). In designing the final proposed rates, factors such as ability to pay, continuity of past rate philosophy, economic development, ease of administration, and customer understanding may typically be taken into consideration. However, the proposed rates must take into consideration each customer class's proportional share of costs allocated through the cost of service analysis.

2.6 Economic Theory and Rate Setting

One of the major justifications for a comprehensive rate study is founded in economic theory. Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained. This statement's implications on utility rate designs are significant. For example, a water utility usually incurs capacity-related costs to meet summer lawn watering needs. It follows that the customers who create excessive peak demands on the system and create the need for upsizing of the distribution system should pay for those over-sized facilities in proportion to their contribution to total peaking requirements. When costing and pricing techniques are refined, consumers have a more accurate understanding of what the commodity costs to produce and deliver. The same principals discussed are applicable to sewer also but the example of such was only given for illustration purposes. This price-equals-cost concept provides the basis for the subsequent analysis and comments.

> ***"Economic theory suggests that the price of a commodity must roughly equal its cost if equity among customers is to be maintained."***

2.7 Summary

This section of the report has provided a brief introduction to the general principles, techniques, and economic theory used to set water, sewer, and stormwater rates. These principles and techniques will become the basis for the City's comprehensive rate studies.

3 Development of the Water Rate Study

3.1 Water Revenue Requirement

This section describes the development of the revenue requirement for the City's water utility. The City has provided detailed revenue and expenses data for the water system that allowed for the development of the revenue requirement. The revenue requirement analysis is the first analytical step in the comprehensive water rate study process. This analysis determines the adequacy of the City's overall water revenues, at current rate levels. From this analysis, a determination can be made as to the overall level of revenue (rate) adjustment needed to provide adequate and prudent funding for both operating and capital needs. HDR developed an independent analysis based on information provided by the City as part of the review of proposed rate adjustments.

3.1.1 Determining the Water Revenue Requirement

In developing the City's water revenue requirement, the water utility, as an enterprise fund, must financially "stand on its own" and be properly funded. That is, no transfers from other City of Kalama funds occur to support the City's water utility. This reflects one of the City's goals for this study, to establish a prudent level of funding for each utility as separate enterprise funds. As a result, the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the water system on a financially sound and prudent basis.

3.1.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the City's water utility was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for a 10-year time period (2020 through 2030). Reviewing a multi-year time period is recommended since it attempts to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City can begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates. For purposes of setting rates, the study focuses on the next five years as the rate setting period (2021 through 2025)

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized. The "cash basis" approach is the most common methodology used by municipal utilities to set their revenue requirement. This is also the methodology that the City has historically used to establish its water revenue requirement. Table 3 - 1 provides a summary of the "cash basis" approach and cost components used to develop the City's water revenue requirement.

Table 3 – 1
Overview of the Water Utility's "Cash Basis" Revenue Requirements

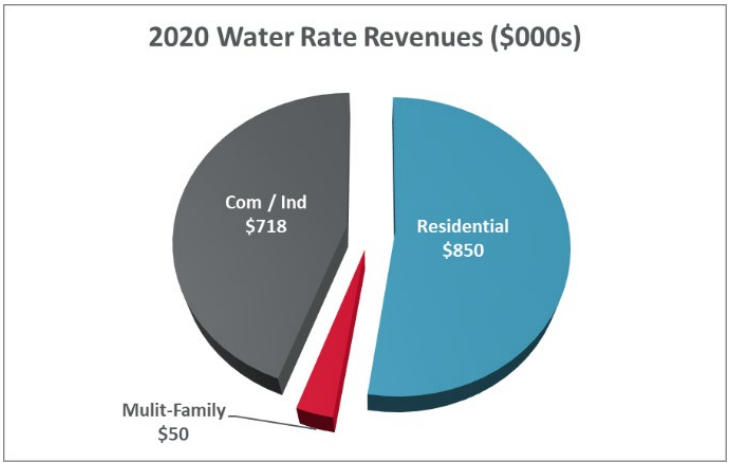
+	Water Operation and Maintenance Expenses
+	Taxes & Transfers
+	Rate Funded Capital
+	Debt Service (Principal + Interest) – Existing and Future
±	To/(From) Reserves
=	**Total Water Revenue Requirement**
–	Miscellaneous Revenues
=	**Net Revenue Requirement (Balance Required from water Rates)**

Given a time period around which to develop the revenue requirement and a method to accumulate the costs, the focus shifts to the development and projection of the revenues and expenses of the City's study.

The primary financial inputs in the development of the revenue requirement are the City's adopted budget documents, recent and historical billed customer and consumption data, and the water capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City's water revenue requirement analysis.

3.1.3 Projecting Rate and Other Miscellaneous Revenues

The starting point of the revenue requirement is to develop a projection of the water rate revenues, at present rate levels. In general, this process involved developing projected billing units for each customer group (e.g., general use). For the water utility, the billing units were the number of meters by size for the fixed charge and the monthly usage (metered consumption) for each customer for the consumption charge. The billing units for each customer group were then multiplied by the applicable current water rates. This method of independently calculating revenues links the projected revenues used within the analysis to the projected billing units. It also helps to confirm that the billing units used within the study are reasonable for purposes of projecting future revenues, distributing costs, and ultimately, establishing proposed rates.



As noted above, the projection of revenues, and subsequent cost distribution, is based on specific customer classes of service. The majority of the City's rate revenues (52.5%) are derived from the residential customer class which also includes revenues from the low income customers. The City

also has customer classes for Multi-Family and Commercial / Industrial customers. In total, and at current rate levels, the City is projected to receive approximately $1.6 million in rate revenue in 2020, based on the projection of metered consumption levels. Over time, the study has assumed a conservative level of customer growth, based on historical growth levels, of 2.0% per year. This results in rate revenues increasing to approximately $1.8 million, at present rates, in 2025 as a result of the estimated growth on the system.

In addition to rate revenues, the City receives miscellaneous revenues from operations. These are revenues related to interest earnings, fees, rental income, and other miscellaneous revenues. In total, the City is projected to receive approximately $220,000 in miscellaneous revenues in 2020. This amount is anticipated to increase to $312,000 in 2025 due to revenue growth projections.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the City's water utility has total projected revenues of approximately $1.8 million in 2020 which increases to approximately $2.1 million by 2025. Again, this does not include any proposed revenue (rate) adjustments, only increases in rate revenues due to customer growth and annual changes in miscellaneous revenues.

3.1.4 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the City to provide water service (supply, treatment, and distribution) as well as to operate and maintain the existing infrastructure. As mentioned, the City provided detailed O&M expenses based on the 2020 adopted budget. The budgeted O&M expenses were projected over the time period based on historical inflationary factors experienced by the City and the general economy. Provided in Table 3 - 2 is a summary of the primary escalation factors used to develop the projection of O&M expenses.

Table 3 – 2
Summary of the O&M Escalation Factors

	2021	2022	2023	2024	2025
Salary	3.0%	3.0%	3.0%	3.0%	3.0%
Benefits	3.5%	3.5%	3.5%	3.5%	3.5%
Medical Benefits	4.5%	4.5%	4.5%	4.5%	4.5%
Materials & Supplies	3.0%	3.0%	3.0%	3.0%	3.0%
Equipment	4.0%	4.0%	4.0%	4.0%	4.0%
Miscellaneous	2.5%	2.5%	2.5%	2.5%	2.5%
Utilities	3.5%	3.5%	3.5%	3.5%	3.5%
Flat	0.0%	0.0%	0.0%	0.0%	0.0%
Insurance	3.0%	3.0%	3.0%	3.0%	3.0%

Each of the budgeted O&M expenses were reviewed and the applicable escalation factor applied to develop the projected O&M over the 10-year time period. Exhibits 2 and 3 of the Water

Technical Appendices provides a more detailed summary of the assumptions used to develop the projection of revenues and escalation of the O&M expenses.

Based on the 2020 adopted budget, the total O&M expenses for the City are $1.1 million. Over the planning horizon, total O&M expenses for the City are projected to increase to approximately $1.3 million by 2025 based on the noted escalation factors. This reflects an average annual inflationary increase of 3.2% per year over the projected time period. The City's O&M expenses fluctuate from year to year based on the cyclical nature of some expenses.

3.1.5 Capital Funding Plan

A key component in the development of the City's water revenue requirement was properly and adequately funding capital improvement needs. One of the major issues facing utilities across the U.S. is the amount of deferred capital projects and the funding pressure from growth/expansion-related improvements. The proper and adequate funding of capital projects is an important issue for all water utilities and is not just a local issue or concern of the Department.

In general, there are three types of capital projects that a utility may need to fund. These include the following types:

- Renewal & replacement projects
- Growth / capacity expansion projects
- Regulatory-related projects

A renewal and replacement project is essentially a project required for maintaining the existing system that is in place today. As the existing plant or pipelines become worn out, obsolete, etc., the utility should be making continuous investments to maintain the integrity of the facilities. In contrast to this, a utility may make capital investments to expand the capacity of facilities to accommodate future capacity needs (customers). Finally, certain projects may be a function of a regulatory requirement in which the Federal or State government mandates the need for an improvement to the system to meet a regulatory standard. Understanding these different types of capital projects is important because it may help to explain why costs are increasing and the cost drivers for any needed revenue adjustments. In addition, and more importantly, the way in which projects are funded may vary by the type of capital project. For example, renewal and replacement projects should be paid for via rates and funded on a "pay-as-you-go basis." In contrast to this, growth or capacity expansion projects may be funded via the collection of development or connection fees (i.e., growth-related charges) in which new development pays an equitable share of the cost of facilities necessary to serve their development (impact). Finally, regulatory projects may be funded by a variety of different means, which may include rates, long-term debt, grants, etc.

While the above discussion appears to neatly divide capital projects into three clearly defined categories, the reality of working with specific capital projects may be more complex. For example, a pump may be replaced, but while being replaced, it is up-sized to accommodate greater capacity to serve increasing demands or new development. There are many projects that

share these "joint" characteristics. At the same time, projects may not be "replacement" related, but rather "improvement" related.

The proper and adequate funding of capital projects is important to help minimize rate increases over time. General financial guidelines state that, at a minimum, a utility should fund an amount equal to, or greater than, the annual depreciation expense through rates. The annual depreciation expense reflects the current investment in plant facilities in service being depreciated or "losing" their useful life. This portion of plant investment needs to be replaced to maintain the existing level of infrastructure (and service levels). However, in theory, the annual depreciation expense reflects an investment in infrastructure that was placed in service an average of 15 years ago, assuming a 30-year useful, depreciable, life. Simply funding an amount equal to the annual depreciation expense will not be sufficient to fund the replacement of an existing or depreciated facility. Therefore, consideration should be given to funding through rates an amount greater than the annual depreciation expense for renewals and replacements of plant facilities and capital infrastructure.

For purposes of developing the capital funding plan the City provided its capital improvement plan (CIP) which has been summarized in Table 3 - 3 along with the expected funding sources developed as part of the rate study.

Table 3 – 3
Summary of the Capital Improvement Plan ($000)

	2020	2021	2022	2023	2024	2025
Total Capital Projects	$795	$1,207	$615	$3,342	$7,345	$3,775
Less: Outside Funding Sources	740	1,082	190	2,932	7,245	3,755
Rate Funded Capital	**$55**	**$125**	**$425**	**$410**	**$100**	**$20**

The capital improvements are primarily related to expansion of the water system (treatment and storage), annual renewal and replacement of aging water system infrastructure, and annual equipment purchases. While the total amount required to fund projects may vary from year-to-year, the rate study capital funding plan has developed a plan to provide a consistent funding source for capital improvements.

As a point of reference, the Department's annual depreciation expense was estimated at $420,000 for 2019. As noted, a desirable and recommended minimum funding target for rate funded capital is an amount equal to or greater than annual depreciation expense. This is critical as the replacement cost of an asset may be many times the original costs reflected through annual depreciation expense. The plan shows that the City is currently behind in annual renewal and replacement funding and needs to continue to increase rate funded capital. As the system continues to age, this will become more important for funding renewal and replacement projects and minimize the need for long-term borrowing, especially for annual renewal and replacement needs.

3.1.6 Projection of Taxes and Transfer Payments

The water revenue requirement also includes taxes and transfer payments. In this particular case, taxes are the payments that the City has to pay for the water utilities business activities. There are two forms or taxes that the City pays; the State of Washington utility tax and business and occupation (B&O) tax. For 2020, the combined taxes are calculated at $90,000.

The water revenue requirement also accounts for and includes transfer payments which are typically intergovernmental transfers to either the general fund or another enterprise to compensate for services rendered. For 2020, there is a total of $395,000 in transfer payments.

3.1.7 Projection of Debt Service

The City currently has one (1) outstanding debt issue for the water utility, the 2001 PWTF loan. The total annual debt service payment is approximately $219,000 in 2020 and remains at approximately this level till it is retired at the end of 2021. In addition to the existing, as outlined in the capital improvement funding plan, it is assumed that the City's water utility will need to issue approximately $13.5 million over the rate setting period in (new) long-term debt issues to prudently fund water system improvements.

As part of this study, HDR is not providing municipal advice as it relates to bonds, terms, or structures of debt issuance. Rather, this study is simply identifying the existing annual debt service payments for rate setting purposes.

3.1.8 Reserve Funding

The final component of the revenue requirement analysis is the transfer to, or from, reserves to either maintain prudent ending fund balances or for future funding of specific capital improvements. In future years, as rates are adjusted and reach sufficient levels, funds are being transferred to the operating reserves to replenish prior expenditures, plan for future capital expenditures, and meet minimum target levels.

3.1.9 Summary of the Revenue Requirement

Given the above projections of revenues and expenses, a summary of the City's water revenue requirement analysis can be developed. In developing the revenue requirement analysis, consideration was given to the financial planning considerations of the City. In particular, emphasis was placed on minimizing rates, while providing adequate funds to support the operational activities and capital improvement needs throughout the test period. Presented below in Table 3 - 4 is a summary of the City's water revenue requirement based on projected expenses and current rates. Detailed exhibits of this analysis can be found in the Water Technical Appendices Exhibit 3.

Table 3 - 4 Summary of the Water Revenue Requirement Analysis ($000)						
	2020	**2021**	**2022**	**2023**	**2024**	**2025**
Revenue						
Rate Revenues	$1,618	$1,651	$1,684	$1,717	$1,752	$1,787
Misc Revenues	220	234	249	269	290	312
Total Revenue	**$1,839**	**$1,885**	**$1,933**	**$1,986**	**$2,041**	**$2,099**
Expenses						
Total O & M	$1,079	$1,113	$1,149	$1,187	$1,225	$1,265
Taxes & Transfers	55	125	425	410	100	20
Net Debt Service	485	501	525	553	583	616
Rate Funded Capital	220	238	19	222	762	1,045
To/(From) Reserves	1	25	63	38	(8)	(3)
Total Expenses	**$1,839**	**$2,003**	**$2,182**	**$2,410**	**$2,662**	**$2,942**
Bal. / (Def.) of Funds	$0	($124)	($262)	($446)	($653)	($887)
Bal. as a % of Rate Adj. Req'd	0.0%	7.5%	15.6%	26.0%	37.3%	49.7%
Proposed Rate Adjustment	**0.0%**	**7.5%**	**7.5%**	**9.0%**	**9.0%**	**9.0%**
Add'l Revenue with Rate Adj.	$0	$124	$262	$446	$653	$887
Bal. / (Def.) After Rate Adj.	$0	$0	$0	$0	$0	$0

As can be seen, the revenue requirement has summed the O&M, taxes and transfers, net debt service, rate funded capital, to/from reserves. The total revenue requirement is then compared to the total revenues which are the rate revenues, at present rate and consumption levels, and other miscellaneous revenues. From this comparison, a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the rate revenues to determine the level of revenue adjustment needed to meet the revenue requirement. The "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years.

In 2021, the overall level of revenues need to be increased to meet the operating and capital expenditures of the water utility. Based on the analysis, the City will need to adjust revenue levels starting in 2021 and 2022 with 7.5% adjustments. Followed by adjustments of 9.0% annually in 2023 through 2025. Based on the rate transition plan, as can be seen above in Table 3 – 4, the proposed annual revenue adjustments (blue shaded line) have been developed to meet the operating and capital needs of the City.

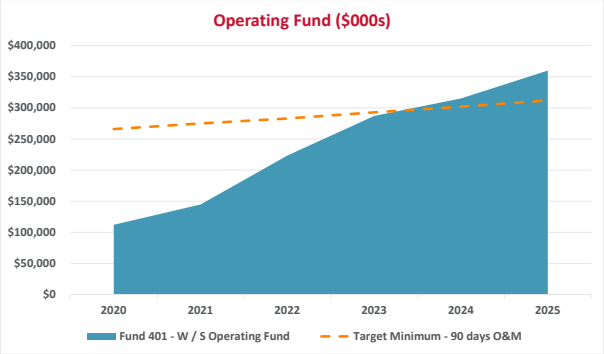
3.1.10 Reserve Fund Levels

Another key element of determining the financial health and sustainability of the City's water utility is to review the level of available reserve levels, after the proposed rate adjustments. Utilities can have several different reserves each with a different purpose. The typical types of reserves utilities maintain are generally referenced as an operating reserve and a capital reserve. Each of these funds can have a minimum ending balance that, if reached or falls below, is a signal

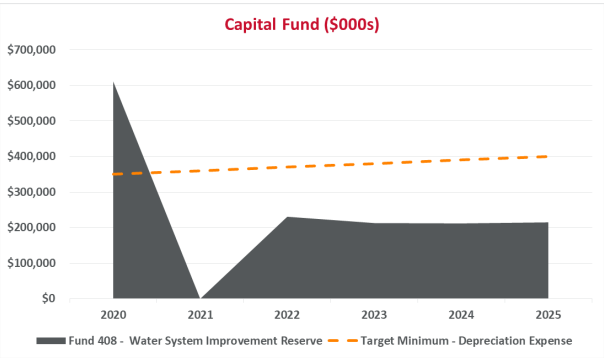
that the City should review the revenue sources associated with each fund. The minimum ending balances will vary depending on the purpose of the fund and the expected revenue sources.

For the City, there are two primary funds for the water utility, the operating reserve and the capital reserve.

- **Operating Reserve –** The operating reserve is in place to meet the City's annual cash flow needs. The typical minimum ending balance for an operating reserve ranges from 90 – 365 days of annual O&M expenses. For the City, the minimum target was set at 90 days of O&M expenses. This target is used in order to maintain a sufficient amount of funds to cover expenses should any unexpected interruption of rate revenues occur.



- **Capital Reserve –** The capital reserve is in place – as the name suggests – to fund capital improvement projects. This fund acts to store funds for use towards future capital projects. In this way, the City can minimize the impact to rates on an annual basis and maintain a more levelized projection of rates over time. There are various methods that can be used to establish a minimum targe level for capital reserves. These can include annual depreciation expense, annual average capital improvement needs, or a specific project(s) needs. For the City's study, annual depreciation was set as the minimum target level. It is important to note however, that given the cyclical nature of capital needs, the level of capital reserves can vary significantly from year to year.



3.1.11 Revenue Requirement Summary

Based on the revenue requirement analyses developed herein, HDR has concluded that the City will need to adjust the level of water revenues received over the next five years (2021 –2025). HDR has reached this conclusion for the following reasons:

- Adjustments are necessary to fund the water utility capital needs
- Adjustments are necessary to maintain prudent funding of annual renewal and replacement of the water system
- The proposed adjustments maintain the City's water utility's strong financial health (e.g., reserve levels, debt service coverage ratios) and provide long-term, sustainable funding levels

In reaching this conclusion, HDR recommends that the City adopts the proposed revenue adjustments for 2021 through 2025. This is in order to provide sufficient funding for the O&M and capital improvement needs for the Study time period.

3.2 Water Cost of Service

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the City's water utility. This section will provide an overview of the cost of service analysis developed for the City.

A cost of service analysis determines the equitable allocation of the total revenue requirement between the various customer classes of service (e.g., Residential, Multi-Family, Com / Ind). The previously developed revenue requirement for 2021 was utilized in the development of the cost of service analysis.

3.2.1 Objectives of a Cost of Service Study

There are two primary objectives in conducting a cost of service analysis:

- Equitably allocate the City's revenue requirement among the customer classes of service; and
- Derive average unit costs (i.e., cost-based rates) for subsequent rate designs

The objectives of the cost of service analysis are different from determining a revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the proportional and equitable manner to collect the revenue requirement from each of the customer classes of service.

The results of the cost of service analysis determine the unit costs which are used in the development of the final proposed rate designs. The cost of service analysis provides a per unit cost of water consumption based on each customer class's equitable and proportional share of costs. For example, a water utility incurs costs related to demand, average day, peak day, fire protection, and customer-related cost components. A water utility must build sufficient capacity [2] to meet summer peak capacity needs. Therefore, those customers contributing to those peak demands on the system should pay their proportionately higher share of the costs to provide the capacity in the system. The unit costs provide the relationship between these components which are then used to set cost-based rates.

[2] System capacity is the system's ability to supply water to all delivery points at the time when demanded. Coincident peaking factors are calculated for each customer class at the time of greatest system demand. The time of greatest demand is known as peak demand. Both the operating costs and capital assets related costs incurred to accommodate the peak demands are generally allocated to each customer class based upon the class's contribution to the peak month, day and hour event.

3.2.2 Determining the Customer Classes of Service

The first step in a cost of service analysis is to determine the customer classes of service. Based on discussion with City staff, and the current rate schedules, the classes of service used within the cost of service analysis were:

- Residential
- Multi-Family
- Commercial / Industrial

In determining classes of service for cost of service purposes, the objective is to group customers together into similar or homogeneous groups based upon similar facility requirements and/or demand characteristics. Currently, the City has a rate structure for each of the above noted customer classes of service, as well as inside and outside rates for each class, along with a low income residential rate. For purposed of the cost of service, the customer classes for inside/outside were combined and low income customer combined with the residential customer class. This is a key aspect of the cost of service analysis that allows for the proportional and equitable allocation of costs to establish the proposed rates for each customer class of service. Based on these customer classes of service, each with their own unique customer consumption patterns and characteristics, the cost of service can be developed.

3.2.3 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the City's water system, a cost of service analysis is conducted. A cost of service analysis utilizes a three-step approach to review costs. These steps take the form of functionalization, allocation, and distribution. Provided below is a detailed discussion of the water cost of service study conducted for the City, and the specific steps taken within the analysis. The approach used for the City's study conforms to generally accepted cost of service methodologies as outlined in the AWWA M1 manual.

3.2.3.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expense and asset (e.g., treatment, pumping, distribution) data by major operating functions (e.g., supply, transmission, storage, distribution). Within this study, there was a limited amount of functionalization of the cost data since it was largely accomplished within the City's system of accounts.

3.2.3.2 Allocation of Costs

The second analytical task performed in a water cost of service study is the allocation of the costs. The allocation of costs examines why the expenses were incurred or what type of need is being met. The following allocations were used to develop the cost of service analysis:

- **Commodity Related Costs:** Commodity costs are those costs which tend to vary with the total quantity of water consumed by a customer. Commodity costs are those incurred under average load conditions and are generally specified for a period of time such as a month or year. Chemicals or utilities (electricity) are examples of commodity-related cost as these costs tend to vary based upon the total consumption of water.

- **Capacity Related Costs:** Capacity costs are those which vary with peak demand, or the maximum rates of flow to customers. System capacity is required when there are large demands for water placed upon the system (e.g., summer lawn watering). For water utilities, capacity related costs are generally related to the sizing of facilities needed to meet a customer's maximum water demand at any point in time. For example, portions of distribution storage reservoirs and mains (pipes) must be adequately sized to meet the peak demands of each customer class of service.
- **Customer Related Costs:** Customer costs are those costs which vary with the number of customers on the water system. They do not vary with system output or consumption levels. These costs are also sometimes referred to as readiness to serve or availability costs. Customer costs may also sometimes be further classified as either actual or weighted. Actual customer costs vary proportionally, from customer to customer, with the addition or deletion of a customer regardless of the size of the customer. An example of an actual customer cost is postage for mailing bills. This cost does not vary from customer to customer, regardless of the size or consumption characteristics of the customer. In contrast, a weighted customer cost reflects a disproportionate cost, from customer to customer, with the addition or deletion of a customer. Examples of weighted customer costs are items such as meter maintenance expenses, where a large commercial customer requires a significantly more expensive meter than a typical residential customer.
- **Public Fire Protection Related Costs:** Fire protection costs are system and capacity costs necessary to allow for public fire protection functions. Usually, such costs relate to public fire hydrants and the over-sizing of mains and distribution storage reservoirs for fire protection purposes.

Water Cost of Service Analysis Terminology

Functionalization – The arrangement of the cost data by functional category (e.g., source of supply, treatment, etc.).

Allocation – The assignment of functionalized costs to cost components (e.g., commodity, capacity, customer and fire protection related).

Distribution – Distributing the allocation costs to each class of service based upon each class's proportional contribution to that specific cost component.

Commodity Costs – Costs that are classified as commodity related vary with the total consumption of water (e.g., chemical use at a treatment plant).

Capacity Costs – Costs classified as capacity related vary with peak day or peak hour usage. Facilities are often designed and sized around meeting peak demands.

Fire Protection Costs – Costs that are related to fire protection services (e.g., hydrants, oversizing of storage and distribution mains).

Customer Costs – Costs classified as customer related vary with the number of customers on the system (e.g., metering costs).

- **Revenue Related Costs:** Some costs associated with the utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be a utility tax which is based on the gross utility revenue.
- **Direct Assignment:** Some costs associated with the utility may be directly assigned to a specific customer class, or classes. This can be a specific O&M expense or component of the infrastructure that only benefits a specific customer class, or classes.

3.2.4 Development of Distribution Factors

Once the allocation process is complete, and the customer groups have been defined, the various allocated costs were distributed to each customer group. The City's allocated costs were distributed to the previously identified customer groups using the following distribution factors.

- **Commodity Distribution Factor:** As noted earlier, commodity-related costs vary with the total water consumption. Therefore, the commodity distribution factor was based on the projected total metered consumption plus losses for each class of service for the projected test period based on a recent 12 month period of customer consumption data.
- **Capacity Distribution Factor:** The capacity distribution factor was developed based on the estimated contribution to peak day use of each class. Peak day use by customer class of service was estimated using peaking factors for each customer group. For the City's study, the peaking factor was defined as the relationship between peak day contribution and average day use and determined for each customer group based on a review of the average month to peak month usage of each individual customer for each class of service. Given an estimated peaking factor, the peak day contribution for each class of service was developed.
- **Customer Distribution Factor:** Customer costs vary with the number of customers on the system. Two basic types of customer distribution factors were identified – actual and weighted. The distribution factor for actual customers were based on the projection of the number of customers developed within the revenue requirement. The weighted customer distribution factor is also broken down further into two factors to reflect the disproportionate costs associated with serving different types of customers. The first weighted customer factor is for customer service and accounting. This weighted customer distribution factor takes into the number of living units to account for the impact that additional units may have on incurring specific types of costs. The second weighted customer distribution factor is for meters and services. This factor reflects the different costs associated with providing larger sized meters. This cost difference is reflected within the distribution factor based on the number of equivalent meters for each customer class. For example, there is a significant cost difference associated with serving a 3/4" meter compared to a 6" meter.
- **Public Fire Protection Distribution Factor:** The development of the distribution factor for public fire protection expenses involved an analysis of each class of service and their fire flow requirements. The analysis took into account the gallon per minute fire flow requirements in the event of a fire, along with the duration of the required flow. The fire flow rates used within the distribution factor were based on industry standards and similar experiences with other water cost of service studies. The minimum fire flow

requirements are then multiplied by the number of customers in each class of service, and the assumed duration of the fire, to determine the class's prorated fire flow requirements.

- **Revenue Related Distribution Factor:** The revenue related distribution factor was developed from the projected rate revenues for 2021 for each customer class of service. These same revenues were used within the revenue requirement analysis discussed previously.

As mentioned previously, in a typical cost of service study, the distribution factors represent a group of similar customers. Further discussion related to the distribution of costs is discussed in more detail in the following sections of this report and can be found in Exhibits 7 through 11 of the Water Technical Appendices.

3.2.5 Functionalization and Allocation of Plant in Service

As noted, one of the first steps of the cost of service analysis is the functionalization and allocation of plant in service. In performing the functionalization of plant in service, HDR utilized the City's historical plant (asset) records. Once the plant assets were functionalized, the analysis shifted to the allocation of the asset. The allocation process included reviewing each group of assets and determining which costs the assets were related to. For example, the City's assets were allocated as: commodity-related, capacity-related, customer-related, revenue-related, public fire protection-related, or a direct assignment. The following approach is based on the methodology as described in the AWWA M1 Manual and the City's water system operating and customer characteristics.

Treatment – Treatment was allocated as commodity and capacity related. Based on the operation of the system, the source of supply assets were 67.9% commodity (average day) and 32.1% to capacity (peak day). This reflects the operation of the treatment facilities as meeting both average day and peak day demands on the system.

Storage – Storage reservoirs, or water tanks, are typically designed to meet at least two types of needs –peak use demands and fire protection. The total storage capacity of the City's reservoirs was examined and consideration given to the capacity required for fire protection under a fire event scenario. This amount of capacity, in relation to the total storage capacity, is considered fire protection related. The balance of storage capacity is considered to be in place to meet peak use demands. This resulted in 78.8% of the storage costs being assigned to peak day, or the capacity cost component, and the remaining 21.2% to be assigned to the fire protection component.

Transmission and Distribution – Transmission and distribution lines (mains) are typically assumed to provide three types of costs. First, a distribution system must be in place to meet a customer's minimum use requirements for water. This portion of the distribution main plant investment is considered to be a customer related cost, or a function of the number of customers on the system. Next, a portion of the distribution system mains is considered a function of meeting peak flow requirements on the system. Distribution mains must be sized to adequately meet the maximum (peak) flows demanded by customers. This portion of the distribution main plant investment is considered capacity related. Finally, distribution mains must also be over-sized for public fire flow demands. This final portion of over-sizing for distribution plant

investment is allocated as public fire protection-related. Based upon an analysis of the City's assets, the assignment of the transmission and distribution mains was therefore 50.0% capacity-related, 35.0% customer-related, and 15.0% fire protection-related.

Pump Station – Pump station assets were allocated as 67.9% to commodity and 32.1% capacity. This is due to pumping costs being incurred to meet average and peak day needs.

General Plant – General plan, equipment, vehicles, etc., are in place to support the above functional categories. Given this, general plant was allocated proportionally as all the above function categories.

Table 3 – 5 provides a summary of the basic functionalization and allocation of the major water plant items.

Table 3 - 5
Summary of the Allocation of Water Plant in Service

Category	Commodity Related	Capacity Related	Customer Related	Fire Protection	Revenue Related	Direct Assign.
Treatment	67.9%	32.1%	0.0%	0.0%	0.0%	0.0%
Source of Supply	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
Storage	0.0%	78.8%	0.0%	21.2%	0.0%	0.0%
Trans. & Dist.	0.0%	50.0%	35.0%	15.0%	0.0%	0.0%
Pumping	67.9%	32.1%	0.0%	0.0%	0.0%	0.0%
General Plant	23.5%	51.1%	14.1%	11.4%	0.0%	0.0%
Total Net Plant In Service	**23.5%**	**51.1%**	**14.1%**	**11.4%**	**0.0%**	**0.0%**

A more detailed exhibit of the functionalization and allocation of water plant (assets) can be found in the Water Technical Appendices in Exhibit 12.

3.2.6 Functionalization and Allocation of Operating Expenses

As noted in the AWWA M1 Manual, operating expenses are generally functionalized and allocated in a manner similar to the corresponding plant account. For example, maintenance of distribution mains is typically allocated in the same manner (allocation percentages) as the plant account for distribution mains. This approach to allocating the City's operating expenses was used for this analysis. Although in general, the City does separate O&M expenses by function (e.g., supply, distribution), not all of the O&M is functionalized which is not uncommon for utilities. As a result, the approach to allocate the operating expenses was based on the allocation of the plant, or asset data, which reflects the investment made by the City to provide service.

For the Study, the revenue requirement for 2021 was functionalized and allocated based on the approach noted above. The City utilized a cash basis revenue requirement, which was comprised of operation and maintenance expenses, taxes and transfers, rate funded capital, debt service, and reserve funding. For the cost of service analysis, a utility basis approach was utilized. This included operation and maintenance expenses, taxes and transfers, annual depreciation

expense, and return on rate base. Provided in Table 3 – 6 is a summary of the allocation of the utility basis revenue requirement to the cost centers prior to the return on rate base. The allocation of revenue requirement is further detailed in Exhibit 14 of the Water Technical Appendices.

Table 3 - 6
Summary of the Classification of the Revenue Requirement ($000)

	Total	Commodity	Capacity	Customer	Fire Protection	Revenue Related	Direct Assign.
Net Revenue Requirement	$1,768	$337	$408	$555	$95	$356	$17

3.2.7 Major Assumptions of the Cost of Service Study

A number of key assumptions were used within the City's water cost of service study. Below is a brief discussion of the major assumptions used.

- A test period of 2021 was used for the cost of service analysis in order to select the expenses which should be allocated and distributed for the rate setting period. The revenue and expense data was previously developed within the revenue requirement study.
- A cash basis approach was utilized which conforms to generally accepted water cost of service approaches and methodologies.
- The allocation of plant in service was developed based upon generally accepted cost allocation techniques. Furthermore, they were developed using the City's specific data.
- Consumption by cost or class of service used within this study were developed for each class of service from historical usage information provided by the City.
- Peak day capacity allocation factors were estimated based upon each customer group's average to peak month relationship.

3.2.8 Summary Results of the Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the previously developed water revenue requirement for 2021. The functionalized revenue requirement was then allocated into the various cost components. The individual allocation totals were then distributed to the various customer classes of service and tiers based on the appropriate distribution factor. For example, commodity related costs were distributed based on the commodity distribution factor which was based on annual water consumption. Each customer class is distributed their proportional share of commodity costs based on total annual water consumption by tier. Similarly, capacity costs were distributed proportionally based on the capacity distribution factor. This factor reflects the peaking characteristics of each class, and tier. In this way, each class is distributed the proportional share of costs allocated to the capacity component.

The distributed expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Table 3 – 7 provides a summary of the distributed

costs to each customer class of service, also described in Exhibit 16 to the Water Technical Appendices.

Table 3 – 7
Summary of the Allocation of the Water Revenue Requirement ($000)

Cost Classifier	Total Costs	Residential	Multi-Family	Com / Ind
Commodity	$337	$145	$16	$176
Capacity	408	158	18	231
Actual Customer	113	102	2	9
Customer Acctg.	413	354	28	31
Meters & Services	30	21	1	8
Public Fire Protection	95	57	3	36
Revenue Related	356	187	11	158
Direct Assignment	17	6	0	11
Total	**$1,768**	**$1,030**	**$78**	**$661**

The cost of service study proportionally and equitably distributes the 2021 revenue requirement to each customer class with their respective benefit received from and burdens placed on the water system (proportional allocation). A cost of service analysis is based on one year's O&M expense data and projected customer usage information. Given this, the results of the cost of service analysis may change from year to year. As the City continues to monitor rates and cost of service results through future studies, future cost of service adjustments may be necessary to reflect costs and customer consumption patterns at that time.

Based on the overall distribution of the costs, a comparison is made to the current revenues to determine the overall revenue adjustment by class of service to meet the overall system revenue needs. Provided in Table 3 - 8 is a summary of the cost of service analysis.

Table 3 - 8
Summary of the Water Cost of Service Analysis ($000)

Class of Service	Present Revenues	Allocated Costs	$ Difference	% Difference
Residential	$867	$986	($119)	13.8%
Multi-Family	51	43	8	-16.2%
Commercial / Industrial	733	745	(13)	1.7%
Total System	**$1,651**	**$1,775**	**($118)**	**7.5%**

As can be seen in Table 3 - 8, while an overall revenue adjustment of 7.5% is necessary, the distribution of costs results in different revenue adjustments by class of service. It is important to note that the result of the cost of service analysis are a snapshot in time and may change

from year to year depending on the inputs. As a point of reference, the total distributed costs to the customer classes in Table 3 - 8 include the return component, which is different than Table 3 - 7 prior to the return component.

3.2.9 Consultant's Conclusions and Recommendations

At this time, no cost of service adjustments are recommended. The results of the cost of service show differences in the cost to serve each customer class however given the overall need to adjust overall water revenues, no cost of service adjustments are recommended.

3.2.10 Summary of the Cost of Service Analysis

This section of the report has provided the recommendations resulting from the cost of service analysis developed for the City's water utility. This analysis was prepared using generally accepted cost of service techniques as provided in the AWWA M1 Manual. The following section of the report will provide a summary of the present and proposed rates for the City's water utility.

3.3 Water Rate Design

The final step of the City's water rate study is the design of rates to collect the desired levels of revenues, based on the results of the revenue requirement analysis and any recommendations based on the cost of service analysis. In reviewing City's rates, consideration must be given to the level of the rates as well as the structure of the rates. The level of rates reflects the amount of revenues that should be collected while the structure of the rates is how it is collected (charged) from the customers.

The overall revenue level for the City has been established in the revenue requirement analysis while the proportional and equitable distribution of costs between the various customer classes has been developed in the cost of service analysis which provides the revenue levels to be collected from each class of service.

3.3.1 Rate Design Criteria and Considerations

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the City to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage efficient use, economic development, etc.)
- Provide revenue stability from month to month and year to year
- Promote efficient allocation of the resource
- Equitable and non-discriminatory (cost-based)

It is important that the City provide its customers with a proper price signal as to what their consumption and peaking (demand) requirements are costing. This goal may be approached through rate level and structure. When developing the proposed rate designs, all the above listed

criteria were taken into consideration. However, it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into consideration the customer's ability to pay, and one which is cost-based. In designing rates, there are always trade-offs between these various goals and objectives.

3.3.2 Development of Cost-Based Water Rates

Developing cost-based and equitable rates is of paramount importance in developing proposed water rates. The City currently has a separate rate structure for each customer class of service. For the Residential customer class, the structure includes a flat fixed service charge and a uniform usage charge on a dollar per CCF (hundred cubic feet) basis. Multi-family customers are charged a fixed service charge based on the service meter size and a uniform usage charge which is the same as the Residential class. Finally, the commercial / industrial rate structure consists of a service charge based on the meter size and a uniform consumption charge for all water use again on a per CCF basis and the same rate as the other customer classes. The fixed service charge, in each case, is designed to collect a portion of the fixed costs of providing water service. The consumption charge is designed to collect the remaining portion of the fixed costs, and the City's variable costs in providing water service.

In discussion with the City, it was determined that the current rate structure was appropriate and adequately addressed achieving the rate design goals and objectives. The following discussion provides a more detailed analysis of the costing techniques and methodologies used to support the City's proposed rate design.

3.3.3 Summary of the Present and Proposed Water Rates

After considering the existing rate structures and deciding to maintain them, the next step is to develop the proposed rates for the next five year period. As a note, the proposed for the projected time period are based on the overall system revenue adjustment and all rates are adjusted by the annual revenue adjustment. Provided below is a summary of the present and proposed rates for each customer class of service for each year of the review period. Provided in Table 3 – 9 is a summary of the current and proposed rates for the City's water utility customers.

Table 3 - 9
Summary of the Present and Proposed Water Rates

	Present Rates	2021	2022	2023	2024	2025
Fixed Charge	***$ / Bi-Mo***					
Residential						
Inside	$10.70	$11.50	$12.36	$13.47	$14.68	$16.00
Outside	19.80	21.28	22.87	24.92	27.16	29.60
Multi-Family						
Inside						
3/4"	$16.90	$18.17	$19.53	$21.29	$23.21	$25.30
1"	28.15	30.26	32.53	35.46	38.65	42.13
1 1/2"	54.00	58.05	62.40	68.02	74.14	80.81
2"	90.05	96.80	104.06	113.43	123.64	134.77
3"	181.25	194.84	209.45	228.30	248.85	271.25
Outside						
3/4"	$31.27	$33.61	$36.13	$39.39	$42.94	$46.81
1"	52.08	55.98	60.18	65.60	71.50	77.94
2"	99.90	179.08	192.51	209.85	228.73	249.32
Com / Ind						
Inside						
3/4"	$12.95	$13.92	$14.96	$16.31	$17.78	$19.38
1"	16.30	17.52	18.83	20.52	22.37	24.38
1.5"	76.55	82.29	88.46	96.42	105.10	114.56
2"	129.45	139.16	149.60	163.06	177.74	193.74
3"	197.00	211.77	227.65	248.14	270.47	294.81
4"	264.55	284.39	305.72	333.23	363.22	395.91
10"	788.00	847.10	910.63	992.59	1,081.92	1,179.29
Outside						
3/4"	$19.43	$20.88	$22.44	$24.46	$26.67	$29.07
1"	24.45	26.28	28.25	30.78	33.56	36.57
1.5"	114.83	123.44	132.69	144.63	157.65	171.84
2"	194.18	208.74	224.40	244.59	266.61	290.61
3"	295.50	317.66	341.48	372.21	405.71	442.22
4"	396.83	426.59	458.58	499.85	544.83	593.87
10"	1,182.00	1,270.65	1,365.95	1,488.89	1,622.88	1,768.94
Volume Charge	***$ / CCF***					
All Customers						
Inside	$2.15	$2.31	$2.48	$2.70	$2.94	$3.20
Outside	3.98	4.27	4.59	5.00	5.44	5.92

Bill impacts will not only vary between customer classes but also customers in the same class.

3.3.4 Water Rate Study Recommendations

Based on the results of the water rate study, HDR recommends the following:

- Revenue adjustments are necessary to prudently fund operating and capital renewal and replacement expenses
  - Water revenues should be adjusted 7.5% annually in 2021 and 2022 then 9.0% annually in 2023 through 2025
  - The proposed rates would be effective January 1st of each year
- The proposed rates reflect the results and recommendations of the Study.
- Prior to the end of the financial planning projected period, the City should complete a review of the water revenue levels and costs at that time.

3.4 Summary of the Water Rate Study

This completes the analysis for the City of Kalama's water utility. This study has provided a comprehensive review and development of proposed water rates for the City. Adoption of the proposed water rates will allow the City to meet its current and projected water system financial obligations for the time period reviewed based on the assumed customer growth, capital plan and deferred capital, and inflationary increases in operating costs. Should these assumptions change, the proposed rate adjustments may also need to be revised to reflect the current conditions.

4 Development of the Sewer Rate Study

4.1 Sewer Revenue Requirement

This section describes the development of the revenue requirement analysis for the City's sewer utility. The revenue requirement analysis is the first analytical step in the comprehensive rate study process. From this analysis, a determination can be made as to the overall level of sewer rate revenue adjustments needed to provide adequate and prudent funding for both operating and capital needs of the sewer utility.

4.1.1 Determining the Revenue Requirement

In developing the City's sewer revenue requirement, the utility must financially "stand on its own" and be properly funded. As a result, the revenue requirement analysis, as developed herein, assumes the full and proper funding needed to operate and maintain the City's sewer system on a financially sound and prudent basis. The following sections will provide a more detailed discussion of the development of the sewer revenue requirement analysis.

4.1.2 Establishing a Time Frame and Approach

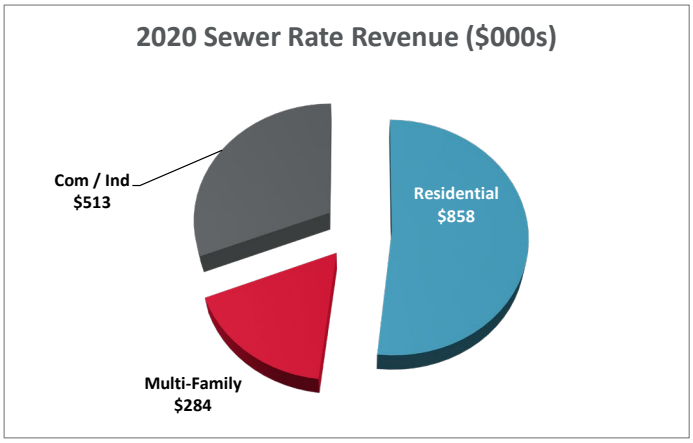
The first step in calculating the revenue requirement for the City's sewer system was to establish a time frame for the revenue requirement analysis. A 10-year period was determined to be an appropriate amount of time for the financial plan. This financial plan was composed of the City's 2020 budget which was then projected by assumed escalation factors. This is the same time period as was used in the water utility analysis. Reviewing a multi-year time period is recommended since it attempts to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City can begin planning for these changes sooner, thereby minimizing short-term rate impacts and overall long-term rates.

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. In this particular case, for the revenue requirement analysis a "cash basis" approach was utilized just as in the water utility. The "cash basis" approach is the most commonly used methodology by municipal utilities to set their revenue requirement. This is also the methodology that the City has historically used to establish their sewer revenue requirements.

Given a time period around which to develop the revenue requirement and a method to accumulate the costs; the focus shifts to the development and projection of the revenues and expenses of the City's sewer utility. The primary financial inputs in the development of the revenue requirement were the City's adopted budget documents, recent billed customer and consumption data, and the City's sewer capital improvement plan. Presented below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City's sewer revenue requirement analysis.

4.1.3 Projecting Rate and Other Miscellaneous Revenues

The first step in developing a projection of the sewer rate revenues, at present rate levels, was to determine the projected billing units (fixed based on the number of accounts and, if applicable variable charges based on metered water consumption) for each customer group. The billing units for each customer group were based on the most recent 12-month period of January 2019 to December 2019 to determine the current customer billing characteristics. These billing units were then multiplied by the applicable current sewer rates. This method of independently calculating revenues links the projected revenues used within the analysis to the projected billing units. It also helps to confirm that the billing units used within the Study are reasonable for purposes of projecting future revenues, allocating costs and, ultimately, establishing the proposed rates to collect the target level of revenues. The rate revenues are also shown in Exhibit 3 under "Rate Revenues" for 2020.



The majority of the City's rate revenues are derived from residential customers (51.8%). The City also serves multi-family and commercial / industrial customers. In total, and at currently adopted rate levels, the City's sewer system is projected to receive approximately $1.6 million in rate revenue in 2020. Based on current City planning documents, the Study has assumed a conservative level of customer growth of 2.0% per year. By 2025, the rate revenues - assuming no rate adjustments - are projected to be approximately $1.8 million. The detailed calculation of the revenues at present rates is included in Exhibit 6 of the Sewer Technical Appendices.

In addition to rate revenues, the City also receives other non-operating revenues. These are revenues related to interest income, fees, other misc. revenue, etc. In total, the City's sewer utility is projected to receive approximately $179,000 in 2020. Non-operating revenues were estimated to increase slightly over the Study time period with growth on the system and reach approximately $233,000 in 2025.

On a combined basis, taking into account the rate revenues and the miscellaneous revenues, the City's sewer utility has total projected revenues of approximately $1.8 million in 2020. This amount is anticipated to increase to approximately $2.0 million by 2025 as a result of estimated growth as noted above. The assumptions used for projecting growth and increases in miscellaneous revenues can be found in Exhibit 2 of the Sewer Technical Appendices. The projection of rate and miscellaneous revenues can be found in Exhibit 3.

4.1.4 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the City to maintain the sewer collection, conveyance, treatment, and disposal system at a consistent service level. The starting point of the projection of O&M expenses was the City's adopted 2020 budget. Budgeted O&M

expenses were projected over the rate Study time period based on historical inflationary factors. These factors took into consideration the City's historical cost increases and projected increases. The factors ranged from 2.5% to 4.5% annually for the various types of expenses (e.g., salary, benefits, materials & supplies). In total, O&M expenses were projected to increase at an annual inflation rate of approximately 3.2% over the Study time period. The factors used are the same as in Table 3 - 2 for the water analysis and are also shown in Exhibit 2 of the Sewer Technical Appendix.

The total operation and maintenance expenses for the sewer utility are budgeted to be approximately $908,000 in 2020. Over the five-year projected time period, the total O&M expenses are projected to increase to approximately $1.0 million by 2025.

4.1.5 Projecting Capital Funding Needs

A key component in the development of the sewer revenue requirement was to properly and adequately fund capital improvement needs in the near and long term. One of the major issues facing utilities across the U.S. is the amount of deferred capital projects and the funding pressure from regulatory-related improvements. The proper and adequate funding of capital projects is an important issue for all wastewater utilities and not just a local issue or concern of the City. To accomplish this, the City has a Capital Improvement Plan (CIP) to address both the short and long-term needs of the sewer utility. The City's CIP will help guide and prioritize capital projects over time and capital investments to expand the capacity of facilities to accommodate future customers.

In general, there are three types of capital projects that the City may need to fund. These include the following types:

- Renewal and replacement projects
- Growth/capacity expansion projects
- Regulatory-related projects

A renewal and replacement project is essentially a project to maintain the existing system that is in place today. Existing facilities become worn out, obsolete, etc. The City should continuously be making investments to maintain the integrity of its facilities with renewal and replacement projects. Growth / capacity expansion projects are related to providing service to new customers. This may be through expansion of the existing system or construction of new facilities to provide service to customers within the City service area. Additionally, certain projects may be a function of a regulatory requirement in which the Federal or State government mandates the need for an improvement to the system to meet regulatory standards. Understanding these different types of capital projects is important because it may help to explain why costs are increasing and the cost drivers for any needed rate adjustment.

The way in which projects are funded may vary by the type of capital project. For example, renewal and replacement projects should be funded through annual rates on a "pay-as-you-go basis". In contrast to this, growth or capacity expansion projects may be funded through the collection of capacity charges (i.e., growth-related charges) in which new development pays a proportional and equitable share of the cost of improvements required as a result of their

connection (impact) and that benefit development. Finally, regulatory projects may be funded by a variety of different means, which may include one or more sources such as rates, long-term debt, grants, etc.

While the above discussion appears to neatly divide capital projects into three clearly defined categories, the reality of working with specific capital projects may be more complex. For example, a pump may be replaced, but while being replaced, it is up-sized to accommodate the need for greater capacity. There are many projects that share these "joint" characteristics. At the same time, projects may not be "replacement" related, but rather "improvement" related. Provided below in Table 4 - 1 is a summary of the sewer capital funding analysis, based on the City's CIP.

Table 4 – 1
Summary of the Sewer Capital Improvements ($000)

	2020	2021	2022	2023	2024	2025
Total Capital Projects	$275	$340	$858	$3,056	$982	$954
Less: Other Funding Sources	$25	$25	$448	$2,556	$382	$239
Rate Funded Capital	**$250**	**$315**	**$410**	**$500**	**$600**	**$715**

While the total amount of a project may vary from year to year, the sewer capital funding plan has attempted to provide a consistent funding source for the replacement of deteriorating system assets. In this case, the sewer utility's rates will fund an amount of $250,000 in 2020. The City's annual depreciation expense was approximately $336,000. Similar to the target for the water utility, a desirable funding target for rate funded CIP is an amount equal to or greater than annual depreciation expense in order to approximately keep up with the rate of deterioration of the system assets. This level of funding appears appropriate based on the level of annual depreciation expense. However, as part of the focus of developing the CIP, the City is committed to making an effort to increase this component and the rate funded capital is projected to increase annually to $715,000 by 2025 to better reflect renewal and replacement costs.

The difference between annual rate funded capital and total capital projects is funded primarily through existing annual reserves. In addition the analysis has assumed a grant to fund major improvements in 2023. Should this grant not be available, the City will need to determine the appropriate funding source or defer the project to later years when funding may be available.

As noted, annual depreciation expense is not the same as replacement cost. Thus, funding an amount which exceeds the depreciation expense is both prudent and appropriate. To establish a prudent level of annual replacement funding through rates, HDR worked with City staff to develop a funding plan for the CIP. In developing this financial plan, HDR and the City have attempted to minimize rate impacts while funding the planned capital projects of the City's sewer utility.

4.1.6 Projection of Taxes and Transfer Payments

The sewer revenue requirement also includes taxes and transfer payments. In this particular case, taxes are the payments that the City has to pay for the sewer utilities business activities. There are two forms or taxes that the City pays; the State of Washington utility tax and business and occupation (B&O) tax. State utility taxes are calculated at 3.852% and B&O tax at 1.5% of revenues. For 2020, the combined taxes are calculated at approximately $40,000.

The sewer revenue requirement also accounts for and includes transfer payments which are typically intergovernmental transfers to either the general fund or another enterprise to compensate for services rendered. For 2020, there is a total of $320,000 in transfer payments.

4.1.7 Projection of Debt Service

The City currently has one outstanding long-term debt issue in the form of an SRF for the WWTP construction. The annual payment (P+I) is approximately $295,000 per year and it is retired in 2027. In the development of the capital funding analysis, it was assumed that the City will also need to issue new long-term debt to fund wastewater capital improvements in 2026 at a level of approximately $6.7 million to fund sewer treatment expansion projects and sewer line projects.

HDR is not advising the City on the terms of any bond issuances but rather identifying the overall funding needs, should any exist. HDR is not acting in a municipal advisor role to the City for the issuance of any long-term borrowing.

4.1.8 Reserve Funding

The final component of the revenue requirement analysis is reserve funding. This can be described as transfers of revenue to reserve funds to maintain prudent ending fund balances or for future funding of specific or unanticipated projects. Alternatively, reserves may be used on an annual basis to supplement overall revenue needs to meet operating and capital expenditures. Additionally, any balance of funds after the expenses are paid is transferred to the operating fund to maintain minimum fund balances.

4.1.9 Summary of the Sewer Revenue Requirement

Given the above projections of revenues and expenses, a summary of the sewer revenue requirement analysis can be developed. In developing the revenue requirement analysis, consideration was given to the financial planning considerations of the City. In particular, emphasis was placed on attempting to minimize rates, yet still have adequate funds to support the operational activities and capital projects throughout the projected time period. Presented in Table 4 - 2 is a summary of the City's projected sewer revenue requirement. Detailed exhibits of this analysis can be found in the Sewer Technical Appendices in Exhibits 1 – 6.

Table 4 - 2
Summary of the Sewer Revenue Requirement Analysis ($000)

	2020	2021	2022	2023	2024	2025
Revenues						
Rate Revenues	$1,624	$1,656	$1,689	$1,723	$1,757	$1,793
Other Revenues	179	189	199	210	221	233
Total Revenues	**$1,803**	**$1,845**	**$1,888**	**$1,933**	**$1,979**	**$2,026**
Expenses						
Total O & M	$908	$899	$928	$958	$989	$1,023
Taxes & Transfers	347	372	388	404	421	438
Rate Funded Capital	250	315	410	500	600	715
Net Debt Service	295	295	295	295	295	295
To / (From) Reserves	2	54	58	76	93	105
Total Expenses	**$1,803**	**$1,936**	**$2,079**	**$2,233**	**$2,398**	**$2,576**
Bal./(Def.) of Funds	$0	($91)	($191)	($300)	($420)	($550)
Bal. as a % of Rate Rev.	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%
Proposed Revenue Adjustment	**0.0%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**
Add'l Rev. from Adjustment	$0	$91	$191	$300	$420	$550
Total Bal./(Def.) of Funds	$0	$0	$0	$0	$0	$0

As can be seen, the revenue requirement has summed the O&M, taxes and transfers, rate funded capital, net debt service, and reserve funding components. The total revenue requirement is then compared to the total revenues which include both rate revenues – at current rate levels – and other revenues.

From this comparison, a balance or deficiency of funds in each year can be determined. This balance or deficiency of funds is then compared to the projected revenues from current rates to determine the level of rate adjustment needed to meet the revenue requirement. The "Bal. / (Def.) of Funds" row is cumulative. That is, any adjustments in the initial years will reduce the deficiency in the later years. Over this time period, the total deficiency in revenues is 30.7%.

The revenue requirement in Table 4 - 2 has been developed to meet financial planning objectives of the City. More specifically, the City desires to adequately and prudently fund its sewer operating and capital needs. In doing so, any needed revenue adjustments should avoid large adjustments in any single year. Table 4 - 2 has also included a set of proposed revenue adjustments (blue highlighted band) which are sufficient to meet the total revenue requirements over the projected time period. The proposed revenue adjustments are a function of assumed inflation over this time period, coupled with the need to increase the capital improvement funding from rates (renewal and replacement funding), meet minimum reserve levels, fund annual debt service payments, and meet legally required debt service coverage ratios.

The overall revenue adjustments may not reflect the final rate adjustments, or bill impacts, seen by the City's customers as the cost of service analysis will proportionally allocate the revenue requirement among the various customer classes. The overall revenue adjustment reflects the needed revenues for the system as a whole. A more detailed revenue requirement is included in Exhibit 3 of the Sewer Technical Appendices.

4.1.10 Consultant's Conclusions

Based on the revenue requirement analysis developed herein, HDR recommends that the City adjust wastewater revenues annually over the next five-year period (2021 –2025). HDR has reached this conclusion for the following reasons:

- Revenue adjustments are necessary to fund the City's capital improvement needs, of which a significant portion is driven by the renewal and replacement of aging infrastructure
- The revenue adjustments are necessary in order to cover the annual inflationary costs related to O&M of the sewer utility
- The proposed revenue adjustments maintain the City's strong financial health and provide long-term sustainable funding levels for the City

In reaching this conclusion, HDR would recommend that the City adopt the proposed sewer revenue adjustments in order to provide sufficient funding for annual O&M and capital improvement program over the next five-year period

4.1.11 Summary of the Sewer Revenue Requirement

This section of the Study has provided a discussion of the City's sewer revenue requirement analysis. The revenue requirement analysis developed a revenue transition plan to support the City's O&M and capital needs. The next section will discuss the cost of service analysis developed for the City's sewer utility.

4.2 Sewer Cost of Service

In the previous section, the revenue requirement analysis focused on the total sources and application of funds required to adequately fund the City's sewer collection and treatment system. This section will provide an overview of the cost of service analysis developed for the City.

A cost of service analysis is concerned with the proportionate allocation of the total revenue requirement between the various customer classes of service (Residential, Multi-family, Com / Ind). The previously developed revenue requirement was utilized in the development of the cost of service analysis.

4.2.1 Objectives of a Cost of Service Study

There are two primary objectives in conducting a wastewater cost of service study:

- ✓ Distribute the City's revenue requirement among the customer classes of service
- ✓ Derive average unit costs for subsequent rate designs

The objectives of the cost of service analysis are different from determining a revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall revenue needs, while the cost of service analysis determines the fair and equitable manner to proportionately collect the revenue requirement from the City's various customer classes of service.

The second rationale for conducting a cost of service analysis is to ensure that proposed rates are designed such that it properly reflects the costs incurred by the City. For example, a sewer utility typically incurs costs related to flow (wastewater volumes), strength, and customer cost components. Each of these types of costs may be collected in a slightly different manner as to allow for the development of rates that collect costs in the same manner as they are incurred.

4.2.2 Determining the Customer Classes of Service

The first step in a cost of service analysis is to determine the customer classes of service. HDR started with the customer classes of service based on the current rate schedules for the City's sewer utility. The customer classes used in the cost of service analysis are:

- Residential
- Multi-Family
- Commercial / Industrial

In determining classes of service for cost of service purposes, the objective is to group customers together into similar or homogeneous groups based upon facility requirements and/or flow characteristics.

4.2.3 General Cost of Service Procedures

In order to determine the cost to serve each customer class of service on the City's sewer system, a cost of service analysis is conducted. The development of the cost of service on generally accepted principles and methodologies and tailored to the City's system and customer characteristics is paramount. The City's cost of service analysis was based on the Water Environment Federation Manual of Practice No. 27. This manual outlines the approach to establish cost-based and equitable rates and outlines a three-step approach. These steps take the form of functionalization, allocation, and distribution. Provided below is a detailed discussion of the sewer cost of service study conducted for the City, and the specific steps taken within the analysis.

4.2.3.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (plant) data by major operating functions (e.g., collection, pumping, treatment). Within this study, there was a limited amount of functionalization of the cost data, as the City's records functionalized a majority of the costs.

4.2.3.2 Allocation of Costs

The second analytical task performed in a sewer cost of service study is the allocation of the costs. Allocation determines why the expenses were incurred or what type of need is being met. The following cost allocators were used to develop the cost of service analysis:

- **Volume Related Costs:** Volume related costs are those costs which tend to vary with the total quantity of wastewater collected and treated.
- **Strength Related Costs:** Strength related costs are those costs associated with the additional handling and treatment of high "strength" wastewater. Strength of wastewater is typically measured in biochemical oxygen demand[3] (BOD) and total suspended solids[4] (SS). Increased levels of BOD or SS generally equate to increased treatment costs.
- **Customer Related Costs:** Customer-related costs vary with the addition or deletion of a customer or a cost which is a function of the number of customers served. Customer related costs typically include the costs of billing, collecting, and accounting.
- **Revenue Related Costs:** Some costs associated with the utility may vary with the amount of revenue received by the utility. An example of a revenue related cost would be a utility tax which is based on gross utility revenue.

The allocation of costs is provided in Exhibit 10.1 for the infrastructure (sewer assets) and Exhibit 11.1 for the test period revenue requirement of the Sewer Technical Appendices. As mentioned, the basis, or methodology, for the classification process is the WEF MOP #27. The methodology provided in the manual was then applied to the City's specific system and operations and customer characteristics to develop the appropriate classification.

4.2.3.3 Development of Distribution Factors

Once the allocation process is complete, and the customer groups have been defined, the various allocated costs were distributed to each customer class of service. The City's allocated costs were distributed to the customer classes of service using the following distribution factors.

Terminology of a Wastewater Cost of Service Analysis

Functionalization – The arrangement of the cost data by functional category (e.g. collection, pumping, treatment).

Allocation – The assignment of functionalized costs to cost components (e.g. volume, strength, and customer related).

Distribution – Distributing the allocated costs to each class of service based upon each class's proportional contribution to that specific cost component.

Volume Costs – Costs that are allocated as volume related vary with the total flow of wastewater (e.g., power for pumping).

Strength Costs – Costs allocated as strength related refer to the sewer treatment function. Typically, strength-related costs are further defined as biochemical oxygen demand (BOD) and suspended solids (SS). Different types of customers may have high wastewater strength characteristics and high strength wastewater costs more to treat. Treatment facilities are often designed and sized around meeting these costs.

Customer Costs – Costs allocated as customer related vary with the number of customers on the system, e.g., billing costs.

Direct Assignment – Costs that can be clearly identified as belonging to a

[3] BOD is the amount of dissolved oxygen that must be present in water in order for microorganisms to decompose the organic matter in the wastewater

[4] SS is the entire amount of organic and inorganic particles dispersed in wastewater

- **Volume Distribution Factor:** Volume-related costs are generally allocated on the basis of contribution to wastewater flows. Wastewater flows were calculated based on actual water except for the summer months (June – Sept) where flow estimates are based on winter water averages. Because the City does not directly meter wastewater discharges, metered water data is used to estimate contributed average wastewater volume units of service during those months where outside irrigation use is highest. A summary of the volume distribution factor is provided in Exhibit 7 of the Sewer Technical Appendices.
- **Strength Distribution Factor:** Strength-related costs are allocated between BOD and SS. Both of these types of costs are distributed to each of the classes of service based upon the assumed domestic strength level for all customers. A detailed analysis of the allocation of strength related costs is provided in Exhibit 9 of the Sewer Technical Appendices.
- **Customer Distribution Factor:** Customer costs within the cost of service analysis are distributed to the various customer classes of service based upon their respective customer counts. Two types of customer distribution factors were developed; actual and weighted. The actual customer distribution factor assumes that there is no disproportionate cost associated with serving a customer (e.g., postage for bills is the same regardless of the size or usage of the customer). In contrast, a weighted customer distribution factor assumes that there is some disproportionality associated with serving different types of customers and attempts to estimate the level of difference in serving the customers. A detailed analysis of the allocation of customer related costs is provided in the Wastewater Technical Appendices (Exhibit 8).
- **Direct Assignment Distribution Factor:** The costs that are related to a specific customer class are directly assigned in order to avoid any subsidies that might occur from other customers paying for costs they do not incur.
- **Revenue Related Distribution Factor:** The revenue related allocation factor was developed from the projected rate revenues for 2021. A detailed analysis of the allocation of volume related costs are shown in the Technical Appendix (Exhibit 10).

The development of distribution factors is based on generally accepted principles as developed in the WEF MOP #27.

4.2.4 Summary of the Sewer Cost of Service Analysis

In summary form, the cost of service analysis began by functionalizing the City's facility asset records and O&M expenses. The functionalized facility and expense accounts were then allocated into their various cost components. Provided below is a summary of the allocation of the City's 2021 test period revenue requirement using the methodology outlined in the WEF MOP #27 and the City's specific facility requirements and operations. Provided in Exhibits 11 and 12 of the Sewer Technical Appendices is a detailed summary of the allocation of the City's infrastructure and revenue requirement. The allocation of the individual line items of the revenue requirement are summed to develop the results in Table 4 – 3.

Table 4 – 3 Summary of the Allocation of the 2021 Revenue Requirement ($000's)						
Total	Volume	BOD	TSS	Customer	Revenue Related	Direct Assignment
$1,747	$391	$173	$318	$829	$36	$0

As shown in Table 4 – 3 the total revenue requirement for 2021 has been allocated between the various cost components based on generally accepted methodologies and the City's operational and design approach. Next, the individual allocation totals were then distributed proportionally to the various customer groups based on the appropriate distribution factors. Provided below in Table 4 – 4 is a summary of the total distribution of costs, by cost component, to the customer classes of service.

Table 4 – 4 Summary of the Distribution of the 2021 Revenue Requirement ($000's)				
	Total	Residential	Multi-Family	Com / Ind
Volume	$391	$132	$69	$190
BOD	173	59	31	84
TSS	318	108	56	154
Actual Customer	406	318	20	69
Wt. Customer	422	247	121	53
RR	36	18	6	11
DA	0	0	0	0
Total	**$1,747**	**$882**	**$303**	**$561**

The distributed expenses for each customer class were then aggregated to determine each customer class's overall revenue responsibility. Using the rate revenues plus a year of assumed customer growth and the allocated costs from Table 4 - 4, Table 4 - 5 provides a summary of the cost of service analysis.

Table 4 – 5 Summary of the Sewer Cost of Service Analysis ($000)				
Class of Service	Present Rate Revenues	Distributed Costs	$ Difference	% Difference
Residential	$858	$882	($24)	2.8%
Multi-Family	284	303	(19)	6.7%
Commercial / Industrial	513	561	(48)	9.4%
Total	**$1,656**	**$1,747**	**($91)**	**5.5%**

The results of the cost of service analysis indicate minor cost differences between the customer classes of service. When reviewing the results of the cost of service analysis, the results will not be "exact" each time the City updates its cost of service analysis. This is due to changing customer characteristics, external impacts such as weather patterns, and other changes in how the City incurs costs. Given this and the slight differences in the cost of service results, no cost of service adjustments are recommended at this time.

4.2.5 Consultant's Conclusions and Recommendations

As mentioned previously, the cost of service results are not significant, and no interclass adjustments are recommended. A cost of service reflects a single point in time and it is recommended that the City closely follow the results of subsequent cost of service analyses in order to gauge the effects of these outside forces. In addition, the focus of this study was the overall level of sewer rate revenues as developed in the sewer revenue requirement analysis.

4.2.6 Summary of the Sewer Cost of Service Analysis

This section of the Study has provided a summary of the cost of service analysis developed for the City. This analysis was prepared using generally accepted cost of service techniques and principles. The next section of the Study will review the present and proposed sewer rates for the City.

4.3 Sewer Rate Design

The final step of the City's sewer rate study is the design of rates to collect the desired levels of revenue, based on the results of the revenue requirement and cost of service analyses. In reviewing City's rates, consideration is given to the level of the rates and the structure of the rates.

4.3.1 Rate Design Criteria and Considerations

Prudent rate administration dictates that several criteria must be considered when setting utility rates. An example of some of these rate design criteria are listed below:

- Rates which are easy to understand from the customer's perspective
- Rates which are easy for the utility to administer
- Consideration of the customer's ability to pay
- Continuity, over time, of the rate making philosophy
- Policy considerations (encourage efficient use, economic development, etc.)
- Provide revenue stability from month to month and year to year
- Promote efficient allocation of the resource
- Equitable and non-discriminatory (cost-based)
- Compliance with State law

When developing the proposed rate designs, all the above-listed criteria were taken into consideration. However, it is difficult, if not impossible, to design a rate that meets all the goals and objectives listed above. For example, it may be difficult to design a rate that takes into

consideration customers' ability to pay, and one which is cost-based. In designing rates, there are always trade-offs between these various goals and objectives.

4.3.2 Overview of the Present and Proposed Sewer Rates

The City currently has a rate structure for each of the customer classes of service. The City currently has a flat monthly fixed charge rate for the Residential and Multi-Family customers. Additionally, they are charged volumetric component charged on a per CCF basis which is based on water use except for the summer months which are adjusted by a winter water calculation. The rate structure for the commercial / industrial customers includes a fixed charge that varies by meter size and a volume charge for all billed water consumption on a per hundred cubic foot (CCF) basis.

In discussion with City staff, and reviewing industry standard approaches, no changes to the sewer rate structures, or how the customers are billed, are being proposed at this time. Given the result of the prior results and recommendations from the revenue requirement and cost of service analyses, proposed rates can be developed that reflect the costs of providing service. Provided in Table 4 - 14 is a summary of the current and proposed wastewater rates.

Table 4 – 6
Summary of the Present and Proposed Sewer Rates

	Present Rates	2021	2022	2023	2024	2025
Fixed Charge	***$ / Acct***					
Residential	$55.95	$59.03	$62.27	$65.70	$69.31	$73.12
Multi-Family	48.70	51.38	54.21	57.19	60.33	63.65
Commercial / Industrial						
3/4"	$66.00	$69.63	$73.46	$77.50	$81.76	$86.26
3/4"(Out)	66.00	69.63	73.46	77.50	81.76	86.26
1"	82.00	86.51	91.27	96.29	101.59	107.18
1.5"	186.00	196.23	207.02	218.41	230.42	243.09
2"	270.00	284.85	300.52	317.05	334.49	352.89
3"	495.00	522.23	550.95	581.25	613.22	646.95
4"	750.00	791.25	834.77	880.68	929.12	980.22
10"	1,100.0 0	1,160.5 0	1,224.3 3	1,291.6 7	1,362.7 1	1,437.6 6
Volume Charge	***$ / CCF***					
All Customers	$8.70	$9.18	$9.68	$10.21	$10.77	$11.36

As noted above, the structure has not been altered and no interclass adjustments have been proposed. The proposed rates reflect the rates being adjusted by the overall rate revenue adjustment amount and is said to be 'across the board'.

4.4 Summary of the Sewer Rate Design

The City's present sewer rate structures are contemporary in design and reflect the rate structures used by other similar utilities. Based on the City's system and customer characteristics, the proposed sewer rates appropriately reflect the cost to provide service and are cost-based between the various customer classes. Full and complete technical appendices of the development of the comprehensive sewer rate study and the proposed revenue adjustments can be found in the Sewer Technical Appendix of this report.

5 Development of the Stormwater Analysis

5.1 Stormwater Revenue Requirement

As with the water and sewer analyses, in developing the stormwater revenue requirement, it was assumed the stormwater utility must financially "stand on its own" and be properly funded. As a result, the revenue requirement, as developed herein, assumes the full and proper funding needed to operate and maintain the stormwater utility on a financially sound and prudent basis. This includes maintaining adequate reserve levels, prudently funding annual renewal and replacement needs (rate funded capital), and meeting other industry standard financial metrics (e.g., debt service coverage). The following discussion provides more detail regarding the development of the stormwater revenue requirement and rate design analysis.

5.1.1 Determining the Time Period and Methodology

To begin calculating the revenue requirement for the stormwater utility, a time frame for the revenue requirement analysis must be established. For this study, the revenue requirement was developed for a 10-year projected time period, with a focus on and the rate transition plan for the next five years (2021 – 2025). This time period is identical to that used for the water and sewer analyses.

The second step in determining the revenue requirement was to decide on the basis of accumulating costs. As with the revenue requirement analyses for the water and sewer utilities, a "cash basis" methodology was utilized, which was also the method used in the prior rate study.

The primary financial inputs in this process were the City's historical stormwater billing records, adopted 2020 stormwater budget, and stormwater capital improvement plan which was updated to reflect the timing of projects. The following is a detailed discussion of the analytical steps and key assumptions contained in the development of the projections of the City's stormwater revenues and expenses.

5.1.2 Projection of Stormwater Revenues

The City receives revenue from two primary sources, stormwater rate revenue and other (miscellaneous) revenue. The projection of the stormwater rate revenues is based on the current rate structure. Other revenues are primarily related to special assessments, which are minimal.

The first step in developing the revenue requirement was to develop a projection of stormwater rate revenues, at present (currently adopted) rate levels. In general, this process involved developing projected billing units that were then multiplied by the applicable current stormwater rates. This method of independently calculating revenues assures the projected stormwater revenues used within the analysis tie to the projected billing units used in the rate design analysis.

There are no specific customer classes for the City's stormwater as all customers are charged the same rate on a per equivalent stormwater unit (ESU) basis. In total, using the present stormwater rates, the City is projected to receive approximately $120,000 in rate revenues in 2020. Over the planning horizon of this study, and based upon 2.0% annual customer growth (the same level

assumed in water and sewer) and the current rates, the projected total stormwater rate revenues are projected to be approximately $132,000 by 2025.

In addition to rate revenues, the City also receives a minor amount of other revenues. For 2020, the projected other revenues are approximately $500. Other revenues are projected to increase slightly over the review period and are estimated to be approximately $552 by 2025.

On a combined basis, taking into account the rate revenues along with other revenues, the City's total projected stormwater revenues are expected to be approximately $121,000 in 2020, gradually increasing to $133,000 by 2025.

5.1.3 Projecting Operation and Maintenance Expenses

Stormwater operation and maintenance (O&M) expenses are incurred by the City to operate and maintain the stormwater system (plant in service). The costs incurred in this area are expensed during the current year and are not capitalized or depreciated. In general, operation and maintenance O&M expenses are grouped into functional categories.

To begin the process of projecting O&M expenses over the planning horizon, escalation factors were developed. Similar to the other utilities, escalation factors were developed for the basic types of expenses incurred: salaries, benefits, materials and supplies, utilities, etc. Escalation factors were projected based on recent inflationary trends and assumed to be approximately 2.5% - 4.0% per year. These escalation factors are consistent with those used in the water and sewer revenue requirement analyses and reflect the historical cost trends for the City's utilities.

Given the budgeted 2020 O&M expenses and the additional O&M projections, HDR then escalated the stormwater O&M expenses based on the previously mentioned escalation factors. The total stormwater operation and maintenance expenses are projected to be approximately $60,000 in 2020, and they are projected to increase to approximately $93,000 by 2025.

5.1.4 Projecting Capital Improvement Funding

The City developed a long-term stormwater capital improvement plan that was recently updated and incorporated into the stormwater rate study. The majority of the annual capital costs are driven by drainage rehabilitation and improvement projects as well as a comprehensive plan.

The City's stormwater capital improvement plan totals approximately $350,000 over the 2020 through 2025 review period. Provided in Table 5 - 1 is the annual stormwater capital improvement plan for the rate setting period. The actual capital projects completed during the time period will depend on available funding sources and priority of the projects. The funding sources for these projects are assumed to be from reserve funds and rate funded capital.

Table 5 – 1
Summary of the Stormwater Capital Improvement Plan ($000s)

	2020	2021	2022	2023	2024	2025
Total Capital Projects	**$75**	**$30**	**$100**	**$0**	**$70**	**$75**
Less: Outside Funding Sources						
Operating Fund Reserves	$70	$0	$0	$0	$0	$0
Capital Fund Reserves	5	20	0	0	0	0
Assumed New Low Interest Loan	0	0	0	0	0	0
Additional Revenue Bonds	0	0	0	0	0	0
Total Outside Funding	**$75**	**$20**	**$0**	**$0**	**$0**	**$0**
Total Rate Funded Capital	**$0**	**$10**	**$100**	**$0**	**$70**	**$75**

Similar to the water and sewer capital plan, there are a number of different funding sources which may be used to fund the capital improvement plan. Among the methods that may be used to finance these capital improvement projects are long-term debt, grants, reserve funds, developer contributions, and rate funded capital. All of the projects in the capital plan are funded annually through rates (rate funded capital) or reserves, which is a sound practice. Although this is a prudent approach and one that minimizes rate impacts, given the amount of reserve funding of capital the City should be vigilant to observe the ending reserve balances to make sure it does not fall below the minimum level. As the stormwater utility is a relatively young utility, the annual capital needs as well as funding level is still being fine-tuned. As the stormwater utility matures, additional projects, and funding needs will be necessary to maintain and improve the stormwater infrastructure.

5.1.5 Projection of Taxes and Transfer Payments

Unlike the taxes for the water and sewer utilities, the stormwater utility pays only a business and occupation (B&O) tax. The utility pays business and occupation (B&O) taxes on 1.5% of all revenues. The stormwater B&O taxes for 2020 are projected to be approximately $1,800. By 2025, the figure increases to $2,000 based on assumed customer growth. The City currently has no other transfers budgeted for the stormwater utility.

5.1.6 Projection of Debt Service

At the present time, there is one outstanding stormwater debt service obligation which is an interfund loan from the City's sewer utility which has an annual payment of $70,000 and is paid off in 2022. As noted in the capital section above, no new or additional long-term debt issuances have been assumed for the City's stormwater utility to fund the updated capital projects.

5.1.7 Reserve Funding

This study has used reserve funding that is transfers to or from reserve funds to smooth and mitigate the rate adjustments in any particular year. Reserve funding can also be used to help build or replenish reserves if they have been drawn down in prior years. In the stormwater

analysis, the reserve funding is deficient in the first few years and reserves are used to smooth the rate transition.

5.1.8 Summary of the Stormwater Revenue Requirement

Given the above projections of stormwater revenues and expenses, a summary of the revenue requirement for the City's stormwater utility can be developed. In developing the revenue requirement, consideration was given to the financial planning considerations. In particular, emphasis was placed on attempting to minimize rate impacts, yet still have adequately fund the stormwater operational activities and capital projects throughout the projected time period. Presented in Table 5 - 2 is a summary of the stormwater revenue requirement.

Table 5 – 2
Summary of Stormwater Revenue Requirement ($000s)

	2020	2021	2022	2023	2024	2025
Revenues						
Rate Revenues	$120	$122	$125	$127	$130	$132
Other Revenues	1	1	1	1	1	1
Total Revenues	**$121**	**$123**	**$125**	**$128**	**$130**	**$133**
Expenses						
O&M Expenses	$60	$82	$85	$87	$90	$93
Taxes & Transfers	2	2	2	2	2	2
Rate Funded Capital	0	10	100	0	70	75
Net Debt Service	70	70	70	0	0	0
Reserve Funding	(11)	(29)	(107)	78	24	38
Total Expenses	**$121**	**$134**	**$150**	**$167**	**$186**	**$208**
Total Bal./(Def.) of Funds	$0	($12)	($25)	($40)	($57)	($76)
Bal./Def. as % of Rate Rev.	0.0%	9.5%	19.9%	31.3%	43.8%	57.4%
Proposed Rate Adjustments	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**
Add'l Rev with Rate Adj.	$0	$12	$25	$40	$57	$76
Bal. / (Def.) After Rate Adj.	0	0	0	0	0	0

In reviewing Table 5 - 2, it is important to note the annual deficiencies are cumulative and any rate adjustments in prior years will reduce the overall deficiency in the latter years. In summary, it appears that the overall stormwater utility deficiency is approximately 57.4%. The deficiency varies by year and is driven, in part, by the capital improvement funding plan, meeting financial targets, and annual operational expenses. The deficiency in 2021 is approximately $12,000. Over time, and by 2025, the deficiency is estimated to be approximately $76,000. The proposed stormwater rate adjustments are intended to provide adequate funding for annual operating and capital needs of the stormwater utility. As a part of this financial plan, annual rate adjustments of 9.5% are recommended from 2021 to 2025.

5.1.9 Debt Service Coverage Ratios

Debt service coverage ratios are a financial measure of a utility's ability to repay debt as noted in the discussion with the water and sewer utility. There currently is no outstanding debt for the

stormwater utility. Additionally, no additional or new long-term debt issuances are assumed to fund capital improvement projects. The stormwater utility will, however, be in a strong financial position is the City identifies and issues long-term debt to fund appropriate capital projects in the future.

5.1.10 Review of the Stormwater Reserve Levels

The stormwater utility technically has one reserve fund but for rate setting purposes it was divided into two reserve funds: the operating reserve and the capital reserve. Currently, the stormwater operating reserve fund has a minimum target balance of $15,000 for 2020 which is calculated as approximately 90 days of O&M expenses. The City's capital reserve does not have a target minimum. The stormwater reserve funds are deficient in the initial years then begin to rebuild fund balance. This is due to dynamic nature of a utility in its infancy. The total costs related to the stormwater utility are still being fine-tuned and as a result there is a dependence on reserves in the short term until rates can be transitioned to levels that fully support the stormwater utility's needs. The City should routinely analyze their reserve levels to confirm and maintain adequate levels.

5.1.11 Consultant's Stormwater Revenue Requirement Recommendations

Based upon the stormwater revenue requirement analysis developed herein, HDR has recommended a set of annual rate adjustments for the stormwater utility. HDR recommends rate adjustments of 9.5% annually in 2021 through 2025. These proposed rate adjustments should allow the City to fully fund its operations and planned capital improvements.

5.2 Development of the Stormwater Cost of Service

Typically, in the progressive multistep approach to a comprehensive rate study, a cost of service analysis would be undertaken – similar to that of the water and sewer utilities – whereby costs would be proportionally allocated based on the process of functionalization, allocation, and distribution to the different customer classes of service. For stormwater, however, this process is abbreviated given that the City charges all customers on an equivalent stormwater unit (ESU) basis. An ESU is defined as 3,500 square feet of impervious surface area. Given this approach, the cost of service can be simplified to a calculation of the cost of the ESU by dividing the net revenue requirement (revenue requirement less miscellaneous revenues) by the total number of ESUs on the stormwater system. After a review of the City's stormwater rates, it appears that the current rate structure for the stormwater utility is contemporary and equitable. At this time, HDR is not recommending any rate structure changes to the stormwater rates.

5.3 Development of the Stormwater Rate Designs

The final step of the stormwater rate study process is the design of stormwater rates to collect the desired levels of revenues, based upon the results of the revenue requirement analysis. In reviewing the rate designs, consideration is given to the level of the rates and the structure of the rates.

5.3.1 Rate Design Goals and Objectives

Prudent rate administration dictates that several criteria must be considered when setting utility rates. The typical rate design goals and objectives for a stormwater utility are similar to those

described for the water utility and referenced in the sewer analysis. The same rate design goals and objectives were considered during the review of the stormwater rates.

5.3.2 Present and Proposed Stormwater Rate Designs

In developing the proposed rate designs, and as noted previously, the City's existing stormwater rate structure was examined and analyzed. The current rate structure is charge on an ESU basis and one (1) ESU is equal to 3,500 square feet of impervious surface. "Impervious Surface" means a hard surface area which either prevents or retards the entry of water into the soil mantle as it entered under natural conditions prior to development, or a hard surface area which causes water to run off the surface in greater quantities or at an increased rate of flow from the flow present under natural conditions prior to development. Common impervious surfaces include, but are not limited to, roofs, sidewalks, walkways, patios, concrete or asphalt paving, driveways, parking lots, storage areas, areas which are paved, graveled, or made of packed earthen materials and other surfaces which similarly impede the natural infiltration of surface and storm water. Open, uncovered flow control or water quality treatment facilities shall not be considered as impervious surfaces.

All residential dwelling units are therefore deemed to contain one (1) ESU. For all other developed properties within the City's stormwater utility boundaries, the City determines the number of ESUs by dividing the number of square feet of impervious surface on each property by 3,500 square feet. Each developed parcel of property shall be deemed to comprise a minimum of one ESU. Provided below in Table 5 - 3 is a summary of the present and proposed stormwater rates.

Table 5 - 3
Present and Proposed Stormwater Rates

	Present	Proposed				
	Rate	2021	2022	2023	2024	2025
All Customers - $ / ESU	$5.60	$6.13	$6.71	$7.35	$8.05	$8.81

The proposed rate design maintains a fixed monthly charge. The structure has not changed and only the level of rates have been adjusted annually based on the proposed rate transition plan.

5.4 Summary of the Stormwater Rate Study Update

This completes the analysis for the City's stormwater utility. The stormwater utility rate study has developed a financial plan for the full funding of operating and capital needs. A full and complete technical appendix of the development of the comprehensive rate study and the proposed rate adjustments can be found in Stormwater Technical Appendix of this report.

Water Technical Appendix

City of Kalama
Water Rate Study
Summary of the Water Revenue Requirement
Exhibit 1

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Revenues											
Rate Revenues	$1,618,420	$1,650,788	$1,683,804	$1,717,480	$1,751,829	$1,786,866	$1,822,603	$1,859,055	$1,896,237	$1,934,161	$1,972,845
Other Revenues	220,350	234,351	249,377	268,650	289,627	312,459	333,239	343,872	353,355	363,114	373,158
Total Revenues	**$1,838,770**	**$1,885,139**	**$1,933,181**	**$1,986,130**	**$2,041,456**	**$2,099,325**	**$2,155,843**	**$2,202,927**	**$2,249,591**	**$2,297,275**	**$2,346,002**
Expenses											
Total Operations & Maintenance	$1,078,500	$1,113,365	$1,149,370	$1,186,552	$1,224,951	$1,264,607	$1,305,562	$1,347,857	$1,391,539	$1,436,653	$1,483,246
Rate Funded Capital	55,000	125,000	425,000	410,000	100,000	20,000	210,000	325,000	400,000	500,000	600,000
Taxes & Transfers	484,500	501,476	525,047	553,189	583,327	615,624	646,124	666,616	686,245	706,468	727,301
Net Debt Service	219,701	237,935	19,321	221,526	761,581	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239
Reserve Funding	1,068	24,946	63,306	38,349	(7,836)	(3,467)	2,736	(7,476)	14,324	16,939	25,694
Total Revenue Requirement	**$1,838,770**	**$2,002,722**	**$2,182,045**	**$2,409,617**	**$2,662,024**	**$2,942,003**	**$3,209,660**	**$3,377,237**	**$3,537,347**	**$3,705,298**	**$3,881,480**
Bal. / (Def.) of Funds	$0	($117,583)	($248,864)	($423,487)	($620,568)	($842,678)	($1,053,817)	($1,174,310)	($1,287,756)	($1,408,023)	($1,535,478)
Bal as a % of Rate Adj. Req'd	0.0%	7.5%	15.6%	26.0%	37.3%	49.7%	60.9%	66.5%	71.5%	76.7%	82.0%
Proposed Rate Adjustment	**0.0%**	**7.5%**	**7.5%**	**9.0%**	**9.0%**	**9.0%**	**7.5%**	**3.5%**	**3.0%**	**3.0%**	**3.0%**
Add'l Revenue with Rate Adj.	$0	$123,809	$262,042	$445,911	$653,429	$887,300	$1,109,620	$1,236,493	$1,355,946	$1,482,582	$1,616,786
Bal. / (Def.) After Rate Adj.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Debt Service Coverage Ratio (all debt)											
Before Rate Adjustment	2.46	2.26	27.66	2.40	0.69	0.50	0.49	0.49	0.48	0.48	0.47
After Proposed Rate Adjustment	2.46	2.78	41.22	4.41	1.55	1.35	1.56	1.67	1.78	1.89	2.02
Average Residential Customer Bill	(Current rates; 3/4" meter + 6 CCF)										
Customer Bill after Rate Adj. Proposed	$23.60	$25.37	$27.27	$29.73	$32.40	$35.32	$37.97	$39.30	$40.48	$41.69	$42.94
Total Reserve Funds	***$827,259***	***$294,023***	***$458,905***	***$552,563***	***$629,886***	***$730,199***	***$976,785***	***$1,228,664***	***$1,518,020***	***$1,826,399***	***$2,160,764***

City of Kalama
Water Rate Study
Excalations
Exhibit 2

	Budgeted	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	*Notes*
Revenues												
Res - Cust Growth	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Com - Cust Growth	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
All - Cust Growth	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Misc Revenues	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses												
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Medical Benefits	Budget	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
Materials & Supplies	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Equipment	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
Miscellaneous	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Utilities	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Rate Adjustment	0.0%	7.5%	7.5%	9.0%	9.0%	9.0%	7.5%	3.5%	3.0%	3.0%	3.0%	
Insurance	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Interest	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
New Debt Service												
Low Interest Loans												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	
Revenue Bond												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	3.5%	3.8%	4.0%	4.2%	4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	

City of Kalama
Water Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Revenues												
Rate Revenues												
Residential - Inside	$223,965	$228,444	$233,013	$237,673	$242,427	$247,275	$252,221	$257,265	$262,410	$267,659	$273,012	As Res - Cust Growth
Residential - Outside	504,145	514,228	524,512	535,002	545,702	556,617	567,749	579,104	590,686	602,500	614,550	As Res - Cust Growth
Low Income - Inside	66,930	68,268	69,633	71,026	72,447	73,896	75,374	76,881	78,419	79,987	81,587	As Res - Cust Growth
Low Income - Outside	55,015	56,115	57,237	58,382	59,550	60,741	61,956	63,195	64,459	65,748	67,063	As Res - Cust Growth
Multi-Family - Inside	49,884	50,882	51,899	52,937	53,996	55,076	56,177	57,301	58,447	59,616	60,808	As Res - Cust Growth
Multi-Family - Outside	319	325	332	338	345	352	359	366	373	381	389	As Res - Cust Growth
Com / Ind - Inside	146,562	149,494	152,483	155,533	158,644	161,817	165,053	168,354	171,721	175,156	178,659	As Com - Cust Growth
Coml / Ind - Outside	571,601	583,033	594,693	606,587	618,719	631,093	643,715	656,590	669,721	683,116	696,778	As Com - Cust Growth
Total Rate Revenues	**$1,618,420**	**$1,650,788**	**$1,683,804**	**$1,717,480**	**$1,751,829**	**$1,786,866**	**$1,822,603**	**$1,859,055**	**$1,896,237**	**$1,934,161**	**$1,972,845**	
Other Revenues												
Other Misc. Revenue	$500	$505	$510	$515	$520	$526	$531	$536	$541	$547	$552	As Misc Revenues
Water Utility Tax	181,500	195,113	209,746	228,623	249,199	271,627	291,999	302,219	311,286	320,624	330,243	
Water - Other Sales Tax Collection	2,350	2,374	2,397	2,421	2,445	2,470	2,495	2,520	2,545	2,570	2,596	As Misc Revenues
Hydrant Permit Meter Deposits	5,000	5,050	5,101	5,152	5,203	5,255	5,308	5,361	5,414	5,468	5,523	As Misc Revenues
Engineering Serv - Reimbursement	500	505	510	515	520	526	531	536	541	547	552	As Misc Revenues
Sale of Surplus - Scrap Metal	500	505	510	515	520	526	531	536	541	547	552	As Misc Revenues
Water - Labor	10,000	10,100	10,201	10,303	10,406	10,510	10,615	10,721	10,829	10,937	11,046	As Misc Revenues
Water - Parts	20,000	20,200	20,402	20,606	20,812	21,020	21,230	21,443	21,657	21,874	22,092	As Misc Revenues
Total Other Revenues	**$220,350**	**$234,351**	**$249,377**	**$268,650**	**$289,627**	**$312,459**	**$333,239**	**$343,872**	**$353,355**	**$363,114**	**$373,158**	
Total Revenues	**$1,838,770**	**$1,885,139**	**$1,933,181**	**$1,986,130**	**$2,041,456**	**$2,099,325**	**$2,155,843**	**$2,202,927**	**$2,249,591**	**$2,297,275**	**$2,346,002**	

	Budgeted	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Expenses												
Operations & Maintenance												
Salaries - Admin. General	$75,000	$77,250	$79,568	$81,955	$84,413	$86,946	$89,554	$92,241	$95,008	$97,858	$100,794	As Salary
Benefits - Admin.	32,000	33,120	34,279	35,479	36,721	38,006	39,336	40,713	42,138	43,613	45,139	As Benefits
Supplies	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Materials & Supplies
Travel - Administrative	1,000	1,025	1,051	1,077	1,104	1,131	1,160	1,189	1,218	1,249	1,280	As Miscellaneous
Equipment Maintenance - Admin	13,000	13,520	14,061	14,623	15,208	15,816	16,449	17,107	17,791	18,503	19,243	As Equipment
Miscellaneous	6,000	6,150	6,304	6,461	6,623	6,788	6,958	7,132	7,310	7,493	7,681	As Miscellaneous
Salaries - Water / Maintenance	230,000	236,900	244,007	251,327	258,867	266,633	274,632	282,871	291,357	300,098	309,101	As Salary
Overtime Earnings	35,000	36,050	37,132	38,245	39,393	40,575	41,792	43,046	44,337	45,667	47,037	As Salary
Regular Benefits	135,000	139,725	144,615	149,677	154,916	160,338	165,949	171,758	177,769	183,991	190,431	As Benefits
Uniforms	2,500	2,575	2,652	2,732	2,814	2,898	2,985	3,075	3,167	3,262	3,360	As Materials & Supplies
Operating Supplies	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	As Materials & Supplies
Fuel Consumed	7,500	7,763	8,034	8,315	8,606	8,908	9,219	9,542	9,876	10,222	10,579	As Utilities
Inventory - Meters/Pipe/Fittings	65,000	66,950	68,959	71,027	73,158	75,353	77,613	79,942	82,340	84,810	87,355	As Materials & Supplies
Small Tools & Minor Equipment	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	As Materials & Supplies
Equipment Rental	500	520	541	562	585	608	633	658	684	712	740	As Equipment
Repairs & Maintenance - Contracted	10,000	10,400	10,816	11,249	11,699	12,167	12,653	13,159	13,686	14,233	14,802	As Equipment
Equipment Maintenance	45,000	46,800	48,672	50,619	52,644	54,749	56,939	59,217	61,586	64,049	66,611	As Equipment
Vehicle Maintenance	5,000	5,200	5,408	5,624	5,849	6,083	6,327	6,580	6,843	7,117	7,401	As Equipment
Salaries - Water/Operations	68,000	70,040	72,141	74,305	76,535	78,831	81,196	83,631	86,140	88,725	91,386	As Salary
Overtime Earnings (2)	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095	26,878	As Salary
Benefits	36,000	37,260	38,564	39,914	41,311	42,757	44,253	45,802	47,405	49,064	50,782	As Benefits
Operating Supplies - Chemicals	70,000	72,100	74,263	76,491	78,786	81,149	83,584	86,091	88,674	91,334	94,074	As Materials & Supplies
Other Professional Services	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	As Salary
Intergovernmental Professional Services	6,500	6,760	7,030	7,312	7,604	7,908	8,225	8,554	8,896	9,252	9,622	As Equipment
Electricity	112,000	115,920	119,977	124,176	128,523	133,021	137,677	142,495	147,483	152,645	157,987	As Utilities
Repairs & Maintenance	20,000	20,800	21,632	22,497	23,397	24,333	25,306	26,319	27,371	28,466	29,605	As Equipment
ON Call Pay	7,500	7,725	7,957	8,195	8,441	8,695	8,955	9,224	9,501	9,786	10,079	As Salary
Benefits (2)	3,500	3,605	3,713	3,825	3,939	4,057	4,179	4,305	4,434	4,567	4,704	As Salary
Office Computer Supplies	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Salary
Office & Operating Supplies	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Materials & Supplies
Engineering	500	515	530	546	563	580	597	615	633	652	672	As Materials & Supplies
Communications	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	As Salary
Travel	500	515	530	546	563	580	597	615	633	652	672	As Salary
Utilities	7,500	7,688	7,880	8,077	8,279	8,486	8,698	8,915	9,138	9,366	9,601	As Miscellaneous
Shop Maintenance	1,000	1,035	1,071	1,109	1,148	1,188	1,229	1,272	1,317	1,363	1,411	As Utilities
Miscellaneous & Training	7,000	7,175	7,354	7,538	7,727	7,920	8,118	8,321	8,529	8,742	8,961	As Miscellaneous
Hydrant Permit Meter Deposits	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	As Materials & Supplies
Total Operations & Maintenance	**$1,078,500**	**$1,113,365**	**$1,149,370**	**$1,186,552**	**$1,224,951**	**$1,264,607**	**$1,305,562**	**$1,347,857**	**$1,391,539**	**$1,436,653**	**$1,483,246**	

City of Kalama
Water Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Rate Funded Capital	**$55,000**	**$125,000**	**$425,000**	**$410,000**	**$100,000**	**$20,000**	**$210,000**	**$325,000**	**$400,000**	**$500,000**	**$600,000**	Est. Depreciation = $420,000
Taxes & Transfers												
Accounting Service Fees	$95,000	$97,850	$100,786	$103,809	$106,923	$110,131	$113,435	$116,838	$120,343	$123,953	$127,672	As Salary
GF Water Utilty Tax	99,000	106,425	114,407	124,703	135,927	148,160	159,272	164,847	169,792	174,886	180,133	Rate Adjustment
Water Utility Tax - GFCF	82,500	88,688	95,339	103,920	113,272	123,467	132,727	137,372	141,493	145,738	150,110	Rate Adjustment
Trsf. To 410 Equip Rsve PW	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763	As Equipment
Trsf. To 410 Equip Rsve - WTP Equip. Repl.	0	0	0	0	0	0	0	0	0	0	0	As Equipment
Trsf. To 410 Equip. Reserv - Meter Repl.	30,000	31,200	32,448	33,746	35,096	36,500	37,960	39,478	41,057	42,699	44,407	As Equipment
Transfer - Benefit Reserve 107	4,000	4,140	4,285	4,435	4,590	4,751	4,917	5,089	5,267	5,452	5,642	As Benefits
Transfer To Audit #115	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Salary
Transfer Out To 115 - Insurance	70,000	72,100	74,263	76,491	78,786	81,149	83,584	86,091	88,674	91,334	94,074	As Insurance
Department of Revenue	90,000	86,533	88,419	90,402	92,444	94,548	96,657	98,650	100,662	102,716	104,812	Rate @ 5.029% + Misc @ 1.5%
Total Taxes & Transfers	**$484,500**	**$501,476**	**$525,047**	**$553,189**	**$583,327**	**$615,624**	**$646,124**	**$666,616**	**$686,245**	**$706,468**	**$727,301**	
Debt Service												
PWTF/2001	$219,701	$218,614	$0	$0	$0	$0	$0	$0	$0	$0	$0	Exhibit 5
Additional SRF Loans	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 2.3% for 20 yrs
Additional Revenue Bonds	0	19,321	19,321	221,526	761,581	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239	Calculated @ 4.5% for 20 yrs
Total Debt Service	**$219,701**	**$237,935**	**$19,321**	**$221,526**	**$761,581**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	
Less Other Funding	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Debt Service	**$219,701**	**$237,935**	**$19,321**	**$221,526**	**$761,581**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	**$1,045,239**	
Reserve Funding	**$1,068**	**$24,946**	**$63,306**	**$38,349**	**($7,836)**	**($3,467)**	**$2,736**	**($7,476)**	**$14,324**	**$16,939**	**$25,694**	
Total Revenue Requirement	**$1,838,770**	**$2,002,722**	**$2,182,045**	**$2,409,617**	**$2,662,024**	**$2,942,003**	**$3,209,660**	**$3,377,237**	**$3,537,347**	**$3,705,298**	**$3,881,480**	
Bal. / (Def.) of Funds	$0	($117,583)	($248,864)	($423,487)	($620,568)	($842,678)	($1,053,817)	($1,174,310)	($1,287,756)	($1,408,023)	($1,535,478)	
Additional Taxes	0	(6,226)	(13,178)	(22,425)	(32,861)	(44,622)	(55,803)	(62,183)	(68,191)	(74,559)	(81,308)	
	$0	($123,809)	($262,042)	($445,911)	($653,429)	($887,300)	($1,109,620)	($1,236,493)	($1,355,946)	($1,482,582)	($1,616,786)	
Bal as a % of Rate Adj. Req'd	0.0%	7.5%	15.6%	26.0%	37.3%	49.7%	60.9%	66.5%	71.5%	76.7%	82.0%	
Proposed Rate Adjustment	**0.0%**	**7.5%**	**7.5%**	**9.0%**	**9.0%**	**9.0%**	**7.5%**	**3.5%**	**3.0%**	**3.0%**	**3.0%**	
Add'l Revenue with Rate Adj.	$0	$123,809	$262,042	$445,911	$653,429	$887,300	$1,109,620	$1,236,493	$1,355,946	$1,482,582	$1,616,786	
Bal. / (Def.) After Rate Adj.	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Add'l Rate Adj. Req'd	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

City of Kalama
Water Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	Projected										
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Notes
Average Residential Customer Bill	$23.60	*(Current rates; 3/4" meter + 6 CCF)*										
Customer Bill after Rate Adj. Proposed	$23.60	$25.37	$27.27	$29.73	$32.40	$35.32	$37.97	$39.30	$40.48	$41.69	$42.94	
Bill Difference - Monthly		1.77	1.90	2.45	2.68	2.92	2.65	1.33	1.18	1.21	1.25	
Cumulative Bill Difference		1.77	3.67	6.13	8.80	11.72	14.37	15.70	16.88	18.09	19.34	
Debt Service Coverage Ratio (all debt)												
Before Rate Adjustment	2.46	2.26	27.66	2.40	0.69	0.50	0.49	0.49	0.48	0.48	0.47	
After Proposed Rate Adjustment	2.46	2.78	41.22	4.41	1.55	1.35	1.56	1.67	1.78	1.89	2.02	
Reseve Funds												
Total Beginning Balance	**$1,316,000**	**$827,259**	**$294,023**	**$458,905**	**$552,563**	**$629,886**	**$730,199**	**$976,785**	**$1,228,664**	**$1,518,020**	**$1,826,399**	
Fund 401 - W / S Operating Fund												
Beginning Balance (50%)	**$110,000**	**$112,179**	**$144,785**	**$223,482**	**$287,098**	**$315,244**	**$359,963**	**$422,687**	**$482,169**	**$570,330**	**$668,446**	
Plus: Revenue	1,838,770	2,008,948	2,195,223	2,432,042	2,694,885	2,986,625	3,265,463	3,439,420	3,605,538	3,779,857	3,962,788	
Interest Earnings	1,111	1,434	2,213	2,843	3,121	3,564	4,185	4,774	5,647	6,618	7,754	
Less: To Fund 408 (Debt)	(219,701)	(237,935)	(19,321)	(221,526)	(761,581)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	
Less: O&M	(1,078,500)	(1,113,365)	(1,149,370)	(1,186,552)	(1,224,951)	(1,264,607)	(1,305,562)	(1,347,857)	(1,391,539)	(1,436,653)	(1,483,246)	
Less: Rate-Funded Capital	(55,000)	(125,000)	(425,000)	(410,000)	(100,000)	(20,000)	(210,000)	(325,000)	(400,000)	(500,000)	(600,000)	
Less: Taxes & Transfers	(484,500)	(501,476)	(525,047)	(553,189)	(583,327)	(615,624)	(646,124)	(666,616)	(686,245)	(706,468)	(727,301)	
Ending Balance	**$112,179**	**$144,785**	**$223,482**	**$287,098**	**$315,244**	**$359,963**	**$422,687**	**$482,169**	**$570,330**	**$668,446**	**$783,203**	
Target Minimum - 90 days O&M	*$266,000*	*$275,000*	*$283,000*	*$293,000*	*$302,000*	*$312,000*	*$322,000*	*$332,000*	*$343,000*	*$354,000*	*$366,000*	
Fund 408 - Water System Improvement Reserve												
Beginning Balance	**$750,000**	**$611,050**	**$51**	**$230,763**	**$213,041**	**$212,068**	**$215,026**	**$343,662**	**$478,133**	**$618,589**	**$765,184**	
Plus: Hookup Fees	200,000	204,000	208,080	212,242	216,486	220,816	225,232	229,737	234,332	239,019	243,799	As All - Cust Growth
Plus: Additions	219,701	237,935	39,669	221,526	761,581	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239	1,045,239	
Interest Earnings	6,050	1	2,285	2,109	2,100	2,129	3,403	4,734	6,125	7,576	9,090	
Less: Debt Service	(219,701)	(237,935)	(19,321)	(221,526)	(761,581)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	(1,045,239)	
Less: Capital Projects	(345,000)	(815,000)	0	(232,073)	(219,559)	(219,987)	(100,000)	(100,000)	(100,000)	(100,000)	(100,000)	
Ending Balance	**$611,050**	**$51**	**$230,763**	**$213,041**	**$212,068**	**$215,026**	**$343,662**	**$478,133**	**$618,589**	**$765,184**	**$918,072**	
Target Minimum - Depreciation Expense	*$350,000*	*$360,000*	*$370,000*	*$380,000*	*$390,000*	*$400,000*	*$410,000*	*$420,000*	*$430,000*	*$440,000*	*$450,000*	Escalate 3% per year
Fund 410 - Public Works Equipment Reserve												
Beginning Balance (50%)	**$116,000**	**$104,030**	**$149,187**	**$4,660**	**$52,424**	**$102,573**	**$155,210**	**$210,436**	**$268,363**	**$329,101**	**$392,769**	
Plus: Additions	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763	
Plus: Transfer for WTP Equipment	0	0	0	0	0	0	0	0	0	0	0	
Plus: Transfer for Meter Replacement	30,000	31,200	32,448	33,746	35,096	36,500	37,960	39,478	41,057	42,699	44,407	
Interest	1,030	1,477	46	519	1,016	1,537	2,084	2,657	3,258	3,889	4,549	
Less: Capital Project Funding	(55,000)	0	(190,000)	0	0	0	0	0	0	0	0	
Ending Balance	**$104,030**	**$149,187**	**$4,660**	**$52,424**	**$102,573**	**$155,210**	**$210,436**	**$268,363**	**$329,101**	**$392,769**	**$459,489**	
Fund 420 - Water Improvement Reserve												
Beginning Balance	**$340,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Plus: Additions	0	0	0	0	0	0	0	0	0	0	0	
Interest	0	0	0	0	0	0	0	0	0	0	0	
Less: Capital Project Funding	(340,000)	0	0	0	0	0	0	0	0	0	0	
Ending Balance	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Ending Balance	***$827,259***	***$294,023***	***$458,905***	***$552,563***	***$629,886***	***$730,199***	***$976,785***	***$1,228,664***	***$1,518,020***	***$1,826,399***	***$2,160,764***	

City of Kalama
Water Rate Study
Capital Improvement Plan
Exhibit 4

Inflation	2.7%

Capital Improvement Projects	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	Total	*Notes*
Funded Projects													
Lower Green Mtn. Reservior w/Booster Station	$600,000	$600,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$1,200,000	
Robb Rd Waterline Extension	0	330,000	0	0	0	0	0	0	0	0	0	330,000	
Purchase Property for 1 MG Reservoir	0	70,000	0	0	0	0	0	0	0	0	0	70,000	
Date Street Waterline Replacement	65,000	0	0	0	0	0	0	0	0	0	0	65,000	
Vactor Truck - 2110 PD	55,000	0	0	0	0	0	0	0	0	0	0	55,000	
N. Third Waterline - Fir to Holly	0	0	50,000	0	0	0	0	0	0	0	0	50,000	
Replace Vincent Rd Waterline	0	120,000	0	0	0	0	0	0	0	0	0	120,000	
Unfunded Projects													
Purchase New Service Vehicle - Heavy Duty	$0	$0	$85,000	$0	$0	$0	$0	$0	$0	$0	$0	$85,000	
Purchase New Trackhoe w/Trailer	0	0	120,000	0	0	0	0	0	0	0	0	120,000	
Replace Central Port Waterline	0	0	0	400,000	0	0	0	0	0	0	0	400,000	
Replace Ivy Street Waterline	0	0	0	100,000	0	0	0	0	0	0	0	100,000	
Build 1 MG Reservoir	0	0	250,000	2,250,000	0	0	0	0	0	0	0	2,500,000	
Intall Add'l Filter at WTP	0	0	0	500,000	4,000,000	0	0	0	0	0	0	4,500,000	
Replace Old Pacific HWY S Waterline	0	0	0	0	750,000	750,000	0	0	0	0	0	1,500,000	
Replace Cloverdale Waterlines	0	0	0	0	1,000,000	1,000,000	0	0	0	0	0	2,000,000	
Bore New 8" Main - T-Barge to WTP	0	0	0	0	1,500,000	0	0	0	0	0	0	1,500,000	
Replace Simmons Rd Reservoir w/PS	0	0	0	0	0	1,000,000	0	0	0	0	0	1,000,000	
Replace Jaeger Rd Waterline	0	0	0	0	0	250,000	0	0	0	0	0	250,000	
Replace East Frontage Rd Waterline	0	0	0	0	0	60,000	0	0	0	0	0	60,000	
Replace Waterlines in Modrow Rd/Westview	0	0	0	0	0	600,000	0	0	0	0	0	600,000	
O&M Budgeted													
Improvement Projects	$65,000	$77,025	$79,105	$81,241	$83,434	$103,562	$88,000	$90,376	$92,816	$95,322	$107,632	$963,514	
Equipment	10,000	10,270	10,547	10,832	11,125	11,425	11,733	12,050	12,376	12,710	13,053	126,120	
Total	**$795,000**	**$1,207,295**	**$594,652**	**$3,342,073**	**$7,344,559**	**$3,774,987**	**$99,734**	**$102,426**	**$105,192**	**$108,032**	**$120,685**	**$17,594,634**	
Unidentified Future Capital Projects	$0	$0	$0	$0	$0	$0	$210,266	$322,574	$394,808	$491,968	$579,315	$1,998,931	
Transfer to Cash Reserve	$0	$0	$20,348	$0	$0	$0	$0	$0	$0	$0	$0	$20,348	
Total Capital Improvement Projects	**$795,000**	**$1,207,295**	**$615,000**	**$3,342,073**	**$7,344,559**	**$3,774,987**	**$310,000**	**$425,000**	**$500,000**	**$600,000**	**$700,000**	**$19,613,913**	
Less: Outside Funding Sources													
Fund 401 - W / S Operating Fund	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Fund 408 - Water Sys Improv. Reserve	345,000	815,000	0	232,073	219,559	219,987	100,000	100,000	100,000	100,000	100,000	2,331,619	
Fund 410 - Public Works Equipment Reserve	55,000	0	190,000	0	0	0	0	0	0	0	0	245,000	
Fund 420 - Water Improvement Reserve	340,000	0	0	0	0	0	0	0	0	0	0	340,000	
Grant	0	0	0	0	0	0	0	0	0	0	0	0	
Assumed New Low Interest Loan	0	0	0	0	0	0	0	0	0	0	0	0	
Additional Revenue Bonds	0	267,295	(0)	2,700,000	7,025,000	3,535,000	0	0	0	0	0	13,527,294	
Total Funding Sources	**$740,000**	**$1,082,295**	**$190,000**	**$2,932,073**	**$7,244,559**	**$3,754,987**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$100,000**	**$16,443,913**	
Rate Funded Capital	**$55,000**	**$125,000**	**$425,000**	**$410,000**	**$100,000**	**$20,000**	**$210,000**	**$325,000**	**$400,000**	**$500,000**	**$600,000**	**$3,170,000**	

City of Kalama
Water Rate Study
Debt Schedule
Exhibit 5

	PWTF/2001		*Total*
2020	$219,701		$219,701
2021	218,614		218,614
2022	0		0
2023	0		0
2024	0		0
2025	0		0
2026	0		0
2027	0		0
2028	0		0
2029	0		0
2030	0		0
	$218,614	**$0**	**$218,614**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Residential - Inside														
Fixed Charge	**Rate**													
5/8"	$10.70	629	629	629	629	629	629	629	629	629	629	629	629	629
3/4"	10.70	303	303	303	303	303	303	303	303	303	303	303	303	303
1"	10.70	13	13	13	13	13	13	13	13	13	13	13	13	13
		945	**945**	**945**	**945**	**945**	**945**	**945**	**945**	**945**	**945**	**945**	**945**	**945**
Volume Charge	**$ / CCF**													
All Usage	$2.15	2,653	1,917	1,533	3,157	2,797	6,083	8,433	8,773	3,469	3,333	1,845	1,696	45,691
		2,653	**1,917**	**1,533**	**3,157**	**2,797**	**6,083**	**8,433**	**8,773**	**3,469**	**3,333**	**1,845**	**1,696**	**45,691**
Revenues														
Fixed Charge		$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$10,112	$121,338
Volume Charge		5,705	4,122	3,297	6,788	6,014	13,079	18,132	18,861	7,458	7,166	3,966	3,647	98,235
Total Residential - Inside Revenues		**$15,816**	**$14,233**	**$13,408**	**$16,900**	**$16,126**	**$23,190**	**$28,243**	**$28,973**	**$17,570**	**$17,277**	**$14,078**	**$13,758**	**$219,573**
Residential - Outside														
Fixed Charge	***Rate***													
5/8"	$19.80	632	632	632	632	632	632	632	632	632	632	632	632	632
3/4"	19.80	224	224	224	224	224	224	224	224	224	224	224	224	224
1"	19.80	8	8	8	8	8	8	8	8	8	8	8	8	8
		864	**864**	**864**	**864**	**864**	**864**	**864**	**864**	**864**	**864**	**864**	**864**	**864**
Volume Charge	**$ / CCF**													
All Usage	$3.98	4,532	3,488	3,198	3,916	4,603	9,378	11,984	11,705	5,727	4,848	3,997	5,292	72,665
		4,532	**3,488**	**3,198**	**3,916**	**4,603**	**9,378**	**11,984**	**11,705**	**5,727**	**4,848**	**3,997**	**5,292**	**72,665**
Revenues														
Fixed Charge		$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$17,103	$205,235
Volume Charge		18,028	13,872	12,719	15,575	18,307	37,300	47,665	46,555	22,777	19,281	15,898	21,048	289,025
Total Residential - Outside Revenues		**$35,131**	**$30,975**	**$29,822**	**$32,678**	**$35,410**	**$54,403**	**$64,768**	**$63,658**	**$39,880**	**$36,384**	**$33,001**	**$38,150**	**$494,260**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Low Income - Inside														
Fixed Charge	**Rate**													
Low Income Rate	$4.95	31	31	31	31	31	31	31	31	31	31	31	31	31
		31	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**	**31**
Volume Charge	**$ / CCF**													
All Consumption	$2.15	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	29,663
		2,472	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**2,472**	**29,663**
Revenues														
Fixed Charge		$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$1,841
Water Volume Charge		5,315	5,315	5,315	5,315	5,315	5,315	5,315	5,315	5,315	5,315	5,315	5,315	63,776
Total Low Income - Inside Revenues		**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$5,468**	**$65,617**
Low Income - Outside														
Fixed Charge	***Rate***													
Low Income Rate	$13.88	11	11	11	11	11	11	11	11	11	11	11	11	11
		11	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**	**11**
Volume Charge	**$ / CCF**													
All Consumption	$3.98	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	13,100
		1,092	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**1,092**	**13,100**
Revenues														
Fixed Charge		$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$153	$1,832
Volume Charge		4,342	4,342	4,342	4,342	4,342	4,342	4,342	4,342	4,342	4,342	4,342	4,342	52,104
Total Low Income - Outside Revenues		**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$4,495**	**$53,936**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Multi-Family - Inside														
Fixed Charge														
Bi-Monthly	**Rate**													
3/4"	$33.80			0		0		0		0		0		0
1"	56.30			0		0		0		0		0		0
2"	180.10			0		0		0		0		0		0
Monthly														
3/4"	$16.90	16	16	16	16	16	16	16	16	16	16	16	16	16
1"	28.15	10	10	10	10	10	10	10	10	10	10	10	10	10
1 1/2"	54.00	1	1	1	1	1	1	1	1	1	1	1	1	1
2"	90.05	2	2	2	2	2	2	2	2	2	2	2	2	2
3"	181.25	1	1	1	1	1	1	1	1	1	1	1	1	1
		30	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**	**30**
Volume Charge	**$ / CCF**													
All Usage	$2.15	2,000	1,426	1,436	1,576	1,232	1,571	1,642	1,663	1,222	1,195	1,115	1,271	17,348
		2,000	**1,426**	**1,436**	**1,576**	**1,232**	**1,571**	**1,642**	**1,663**	**1,222**	**1,195**	**1,115**	**1,271**	**17,348**
Revenues														
Fixed Charge		$967	$967	$967	$967	$967	$967	$967	$967	$967	$967	$967	$967	$11,607
Water Volume Charge		4,299	3,066	3,087	3,387	2,650	3,377	3,530	3,575	2,627	2,570	2,397	2,732	37,299
Total Multi-Family - Inside Revenues		**$5,267**	**$4,033**	**$4,055**	**$4,355**	**$3,617**	**$4,345**	**$4,498**	**$4,543**	**$3,594**	**$3,538**	**$3,365**	**$3,699**	**$48,906**
Multi-Family - Outside														
Fixed Charge	***Rate***													
3/4"	$31.27		0		0		0		0		0		0	0
1"	52.08		1		1		1		1		1		1	1
2"	99.90		0		0		0		0		0		0	0
		0	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**1**
Volume Charge	**$ / CCF**													
All Usage	$3.98													0
		0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Revenues														
Fixed Charge		$0	$52	$0	$52	$0	$52	$0	$52	$0	$52	$0	$52	$312
Volume Charge		0	0	0	0	0	0	0	0	0	0	0	0	$0
Total Multi-Family - Outside Revenues		**$0**	**$52**	**$0**	**$52**	**$0**	**$52**	**$0**	**$52**	**$0**	**$52**	**$0**	**$52**	**$312**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Com / Ind - Inside														
Fixed Charge	***Rate***													
Bi-Monthly														
3/4"	$25.90	0		0		0		0		0		0		0
1"	32.60	0		0		0		0		0		0		0
1.5"	153.10	0		0		0		0		0		0		0
2"	258.90	0		0		0		0		0		0		0
3"	394.00	0		0		0		0		0		0		0
4"	529.10	0		0		0		0		0		0		0
6"	0.00	0		0		0		0		0		0		0
8"	0.00	0		0		0		0		0		0		0
10"	1,576.00	0		0		0		0		0		0		0
Monthly														
3/4"	$12.95	65	65	65	65	65	65	65	65	65	65	65	65	65
1"	16.30	19	19	19	19	19	19	19	19	19	19	19	19	19
1.5"	76.55	5	5	5	5	5	5	5	5	5	5	5	5	5
2"	129.45	7	7	7	7	7	7	7	7	7	7	7	7	7
3"	197.00	5	5	5	5	5	5	5	5	5	5	5	5	5
4"	264.55	0	0	0	0	0	0	0	0	0	0	0	0	0
6"		0	0	0	0	0	0	0	0	0	0	0	0	0
8"		0	0	0	0	0	0	0	0	0	0	0	0	0
10"	788.00	0	0	0	0	0	0	0	0	0	0	0	0	0
		101	**101**	**101**	**101**	**101**	**101**	**101**	**101**	**101**	**101**	**101**	**101**	**101**
Volume Charge	**$ / CCF**													
All Usage	$2.15	2,683	1,941	2,385	2,576	4,869	7,078	6,265	7,508	4,530	3,297	2,569	2,012	47,714
		2,683	**1,941**	**2,385**	**2,576**	**4,869**	**7,078**	**6,265**	**7,508**	**4,530**	**3,297**	**2,569**	**2,012**	**47,714**
Revenues														
Fixed Charge		$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$3,425	$41,104
Volume Charge		5,768	4,174	5,128	5,538	10,467	15,218	13,471	16,142	9,739	7,089	5,523	4,327	102,584
Total Com / Ind (Inside) Revenues		**$9,194**	**$7,599**	**$8,554**	**$8,963**	**$13,893**	**$18,643**	**$16,896**	**$19,568**	**$13,165**	**$10,514**	**$8,949**	**$7,752**	**$143,689**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Coml / Ind - Outside														
Fixed Charge	***Rate***													
Bi-Monthly														
3/4"	$38.85		0		0		0		0		0		0	0
1"	48.90		0		0		0		0		0		0	0
1.5"	229.65		0		0		0		0		0		0	0
2"	388.35		0		0		0		0		0		0	0
3"	591.00		0		0		0		0		0		0	0
4"	793.65		0		0		0		0		0		0	0
6"	0.00		0		0		0		0		0		0	0
8"	0.00		0		0		0		0		0		0	0
10"	2,364.00		0		0		0		0		0		0	0
Monthly														
3/4"	$19.43	19	19	19	19	19	19	19	19	19	19	19	19	19
1"	24.45	24	24	24	24	24	24	24	24	24	24	24	24	24
1.5"	114.83	0	0	0	0	0	0	0	0	0	0	0	0	0
2"	194.18	9	9	9	9	9	9	9	9	9	9	9	9	9
3"	295.50	7	7	7	7	7	7	7	7	7	7	7	7	7
4"	396.83	2	2	2	2	2	2	2	2	2	2	2	2	2
6"	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
8"	0.00	0	0	0	0	0	0	0	0	0	0	0	0	0
10"	1,182.00	1	1	1	1	1	1	1	1	1	1	1	1	1
		62	**62**	**62**	**62**	**62**	**62**	**62**	**62**	**62**	**62**	**62**	**62**	**62**
Volume Charge	**$ / CCF**													
All Usage	$3.23	11,463	10,797	9,937	11,384	10,768	16,449	17,571	18,259	12,951	10,748	8,079	10,251	148,658
		11,463	**10,797**	**9,937**	**11,384**	**10,768**	**16,449**	**17,571**	**18,259**	**12,951**	**10,748**	**8,079**	**10,251**	**148,658**
Revenues														
Fixed Charge		$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$6,748	$80,971
Volume Charge		36,967	34,822	32,048	36,715	34,728	53,048	56,666	58,884	41,768	34,662	26,055	33,059	479,422
Total Com / Ind (Outside) Revenues		**$43,715**	**$41,569**	**$38,795**	**$43,462**	**$41,475**	**$59,796**	**$63,414**	**$65,631**	**$48,516**	**$41,409**	**$32,803**	**$39,807**	**$560,393**

City of Kalama
Water Rate Study
Revenues at Present Rates
Exhibit 6

	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-18	Jul-18	Aug-18	Sep-18	Oct-18	Nov-18	Dec-18	Total
Summary													
Number of Accounts													
Residential - Inside	945	945	945	945	945	945	945	945	945	945	945	945	945
Residential - Outside	864	864	864	864	864	864	864	864	864	864	864	864	864
Low Income - Inside	31	31	31	31	31	31	31	31	31	31	31	31	31
Low Income - Outside	11	11	11	11	11	11	11	11	11	11	11	11	11
Multi-Family - Inside	30	30	30	30	30	30	30	30	30	30	30	30	30
Multi-Family - Outside	0	1	0	1	0	1	0	1	0	1	0	1	1
Com / Ind - Inside	101	101	101	101	101	101	101	101	101	101	101	101	101
Coml / Ind - Outside	62	62	62	62	62	62	62	62	62	62	62	62	62
Total Number of Accounts	**2,044**	**2,045**	**2,044**	**2,045**	**2,044**	**2,045**	**2,044**	**2,045**	**2,044**	**2,045**	**2,044**	**2,045**	**2,045**
Consumption (CCF)													
Residential - Inside	2,653	1,917	1,533	3,157	2,797	6,083	8,433	8,773	3,469	3,333	1,845	1,696	45,691
Residential - Outside	4,532	3,488	3,198	3,916	4,603	9,378	11,984	11,705	5,727	4,848	3,997	5,292	72,665
Low Income - Inside	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	2,472	29,663
Low Income - Outside	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	1,092	13,100
Multi-Family - Inside	2,000	1,426	1,436	1,576	1,232	1,571	1,642	1,663	1,222	1,195	1,115	1,271	17,348
Multi-Family - Outside	0	0	0	0	0	0	0	0	0	0	0	0	0
Com / Ind - Inside	2,683	1,941	2,385	2,576	4,869	7,078	6,265	7,508	4,530	3,297	2,569	2,012	47,714
Coml / Ind - Outside	11,463	10,797	9,937	11,384	10,768	16,449	17,571	18,259	12,951	10,748	8,079	10,251	148,658
Total Consumption	**26,895**	**23,133**	**22,053**	**26,172**	**27,833**	**44,123**	**49,459**	**51,470**	**31,462**	**26,984**	**21,168**	**24,086**	**374,839**
Revenues													
Residential - Inside	$15,816	$14,233	$13,408	$16,900	$16,126	$23,190	$28,243	$28,973	$17,570	$17,277	$14,078	$13,758	$219,573
Residential - Outside	35,131	30,975	29,822	32,678	35,410	54,403	64,768	63,658	39,880	36,384	33,001	38,150	494,260
Low Income - Inside	5,468	5,468	5,468	5,468	5,468	5,468	5,468	5,468	5,468	5,468	5,468	5,468	65,617
Low Income - Outside	4,495	4,495	4,495	4,495	4,495	4,495	4,495	4,495	4,495	4,495	4,495	4,495	53,936
Multi-Family - Inside	5,267	4,033	4,055	4,355	3,617	4,345	4,498	4,543	3,594	3,538	3,365	3,699	48,906
Multi-Family - Outside	0	52	0	52	0	52	0	52	0	52	0	52	312
Com / Ind - Inside	9,194	7,599	8,554	8,963	13,893	18,643	16,896	19,568	13,165	10,514	8,949	7,752	143,689
Coml / Ind - Outside	43,715	41,569	38,795	43,462	41,475	59,796	63,414	65,631	48,516	41,409	32,803	39,807	560,393
Total Revenues	**$119,085**	**$108,425**	**$104,597**	**$116,372**	**$120,483**	**$170,392**	**$187,782**	**$192,387**	**$132,687**	**$119,137**	**$102,158**	**$113,182**	**$1,586,686**

2018 Actual	**$1,632,038**
Difference	*($45,352)*
	-2.8%
2020 Budget	**$1,650,000**
Difference	*($63,314)*
	-3.8%

City of Kalama
Water Rate Study
Development of Commodity Distribution Factor
Exhibit 7

	Consumpt in CCF	Outside Surcharge	13.4% Unaccounted Water [1]	Net Water Delivered	Average Day Use (MGD)	% of Total	Total Outside Consumpt	% of Total Outside Consumpt
Residential - Inside	45,691	1.00	6,123	51,813	0.11	12.2%		
Residential - Outside	72,665	1.00	9,737	82,402	0.17	19.4%	72,665	31.0%
Low Income - Inside	29,663	1.00	3,975	33,638	0.07	7.9%		
Low Income - Outside	13,100	1.00	1,755	14,855	0.03	3.5%	13,100	5.6%
Multi-Family - Inside	17,348	1.00	2,325	19,673	0.04	4.6%		
Multi-Family - Outside	0	1.00	0	0	0.00	0.0%	0	0.0%
Com / Ind - Inside	47,714	1.00	6,394	54,107	0.11	12.7%		
Coml / Ind - Outside	148,658	1.00	19,920	168,578	0.35	39.7%	148,658	63.4%
Total	**374,839**		**50,228**	**425,067**	**0.87**	**100.0%**	**234,423**	**100.0%**
		Actual Production [2]		***434,896***	0.89			

Notes

[1] - Estimated
[2] - Actual production in gallons, from 2017 DOH Water Use Efficiency Annual Performance Report

Allocation Factor ***(COM)*** ***(DA-1)***

City of Kalama
Water Rate Study
Development of Capacity Distribution Factor
Exhibit 8

	Average Consumption (MGD)	Peaking Factors [1]	Peak Day Use (MGD)	% of Total
Residential - Inside	0.11	1.75	0.19	14.5%
Residential - Outside	0.17	1.85	0.31	24.3%
Low Income - Inside	0.07	0.00	0.00	0.0%
Low Income - Outside	0.03	0.00	0.00	0.0%
Multi-Family - Inside	0.04	1.40	0.06	4.4%
Multi-Family - Outside	0.00	0.00	0.00	0.0%
Com / Ind - Inside	0.11	1.90	0.21	16.4%
Coml / Ind - Outside	0.35	1.50	0.52	40.4%
Total	**0.87**		**1.28**	**100.0%**
		Actual Peak Day [2]	***1.47***	

Notes

[1] - Developed from peak month to average month
[2] - Based on peak factor for 2014 from Water System Plan

Allocation Factor ***(CAP)***

City of Kalama
Water Rate Study
Development of the Customer Distribution Factor
Exhibit 9

	Actual Customer		*Customer Service & Accounting*				*Meters & Services*	
	Number of Customers	**% of Total**	**Number of Living Units**	**Weighting Factor**	**Weighted Customer**	**% of Total**	**Equivalent Meters**	**% of Total**
Residential - Inside	945	46.2%	945	1.00	945	43.7%	959	36.9%
Residential - Outside	864	42.2%	864	1.00	864	40.0%	876	33.7%
Low Income - Inside	31	1.5%	31	1.00	31	1.4%	0	0.0%
Low Income - Outside	11	0.5%	11	1.00	11	0.5%	0	0.0%
Multi-Family - Inside	30	1.5%	147	1.00	147	6.8%	77	3.0%
Multi-Family - Outside	1	0.0%	0	1.00	0	0.0%	0	0.0%
Com / Ind - Inside	101	4.9%	101	1.00	101	4.7%	269	10.3%
Coml / Ind - Outside	62	3.0%	62	1.00	62	2.9%	421	16.2%
Total	**2,045**	**100.0%**	**2,161**		**2,161**	**100.0%**	**2,601**	**100.0%**
Allocation Factor		***(AC)***				***(WCA)***		***(WCMS)***

Development Of Equivalent Meter Distribution Factor

	Number of Meters									
	3/4"	**1"**	**1 1/2"**	**2"**	**3"**	**4"**	**6"**	**8"**	**10"**	**Total**
Residential - Inside	932	11	0	0	0	0	0	0	0	943
Residential - Outside	856	8	0	0	0	0	0	0	0	864
Low Income - Inside	0	0	0	0	0	0	0	0	0	0
Low Income - Outside	0	0	0	0	0	0	0	0	0	0
Multi-Family - Inside	16	10	1	2	1	0	0	0	0	30
Multi-Family - Outside	0	0	0	0	0	0	0	0	0	0
Com / Ind - Inside	65	19	5	7	5	0	0	0	0	101
Coml / Ind - Outside	19	24	0	9	7	2	0	0	1	62
Total Meters	**1,888**	**72**	**6**	**18**	**13**	**2**	**0**	**0**	**1**	**2,000**
AWWA Meter Equivalencies	*1.00*	*2.50*	*5.00*	*8.00*	*15.00*	*25.00*	*50.00*	*80.00*	*115.00*	

	Equivalent Meters											
	3/4"	**1"**	**1 1/2"**	**2"**	**3"**	**4"**	**6"**	**8"**	**10"**	**Total**	**Ave**	**Wt Factor**
Residential - Inside	932	27	0	0	0	0	0	0	0	959	1.02	36.9%
Residential - Outside	856	20	0	0	0	0	0	0	0	876	1.01	33.7%
Low Income - Inside	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.0%
Low Income - Outside	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.0%
Multi-Family - Inside	16	25	5	16	15	0	0	0	0	77	2.57	3.0%
Multi-Family - Outside	0	0	0	0	0	0	0	0	0	0	#DIV/0!	0.0%
Com / Ind - Inside	65	48	25	56	75	0	0	0	0	269	2.66	10.3%
Coml / Ind - Outside	19	60	0	72	105	50	0	0	115	421	6.79	16.2%
Total Equivalent Meters	**1,888**	**179**	**30**	**144**	**195**	**50**	**0**	**0**	**115**	**2,601**		**100.0%**

City of Kalama
Water Rate Study
Development of the Public Fire Protection Distribution Factor
Exhibit 10

	Number of Units	Fire Prot. Requirements (gals/min)	Duration (minutes) [1]	Total FP Required (1,000 g/min)	% of Total
Residential - Inside	945	1,000	60	56,700	58.1%
Residential - Outside	864	0	0	0	0.0%
Low Income - Inside	31	1,000	60	1,860	1.9%
Low Income - Outside	11	0	0	0	0.0%
Multi-Family - Inside	30	1,500	60	2,700	2.8%
Multi-Family - Outside	1	0	0	0	0.0%
Com / Ind - Inside	101	3,000	120	36,360	37.2%
Coml / Ind - Outside	62	0	0	0	0.0%
Total	**2,045**			**97,620**	**100.0%**

Notes

[1] - From Water System Master Plan Update, 2015 page 3-6.

Allocation Factor ***(FP)***

City of Kalama
Water Rate Study
Development of the Revenue Related Distribution Factor
Exhibit 11

	Revenue 2021	% of Total
Residential - Inside	$228,444	13.8%
Residential - Outside	514,228	31.2%
Low Income - Inside	68,268	4.1%
Low Income - Outside	56,115	3.4%
Multi-Family - Inside	50,882	3.1%
Multi-Family - Outside	325	0.0%
Com / Ind - Inside	149,494	9.1%
Coml / Ind - Outside	583,033	35.3%
Total	**$1,650,788**	**100.0%**

Allocation Factor ***(RR)***

City of Kalama
Water Rate Study
Functionalization and Classification
Exhibit 12.1

	Net Plant In Service 6/16/2020	Commodity (COM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	*Basis of Classification*
Treatment	$5,714,160	$3,877,985	$1,836,175	$0	$0	$0	$0	$0	$0	67.9% COMM 32.1% CAP
Total Treatment	**$5,714,160**	**$3,877,985**	**$1,836,175**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Source of Supply										
Wells	$0	$0	$0	$0	$0	$0	$0	$0	$0	67.9% COMM 32.1% CAP
Total Source of Supply	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Storage										
Reservoirs & Tanks	$5,423,830	$0	$4,274,713	$0	$0	$0	$1,149,117	$0	$0	78.8% CAP 21.2% FP
Total Storage	**$5,423,830**	**$0**	**$4,274,713**	**$0**	**$0**	**$0**	**$1,149,117**	**$0**	**$0**	
Trans. & Distr.										
Estimated	$8,686,758	$0	$4,343,379	$3,040,365	$0	$0	$1,303,014	$0	$0	50.0% CAP 35.0% AC 15% FP
Total Trans. & Distr.	**$8,686,758**	**$0**	**$4,343,379**	**$3,040,365**	**$0**	**$0**	**$1,303,014**	**$0**	**$0**	
Pump Station										
Pumping	$1,739,535	$1,180,557	$558,978	$0	$0	$0	$0	$0	$0	67.9% COM 32.1% CAP
Total Pump Station	**$1,739,535**	**$1,180,557**	**$558,978**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Total Plant Before General	**$21,564,283**	**$5,058,542**	**$11,013,245**	**$3,040,365**	**$0**	**$0**	**$2,452,130**	**$0**	**$0**	
% of Total Plant	***100.0%***	***23.5%***	***51.1%***	***14.1%***	***0.0%***	***0.0%***	***11.4%***	***0.0%***	***0.0%***	
General Plant										
Equipment	$126,520	$29,679	$64,616	$17,838	$0	$0	$14,387	$0	$0	As Total Plant Before General
Total General Plant	**$126,520**	**$29,679**	**$64,616**	**$17,838**	**$0**	**$0**	**$14,387**	**$0**	**$0**	
General Plant % of Total Plant	*0.6%*	*0.6%*	*0.6%*	*0.6%*	*0.0%*	*0.0%*	*0.6%*	*0.0%*	*0.0%*	
Net Plant In Service	**$21,690,803**	**$5,088,221**	**$11,077,861**	**$3,058,203**	**$0**	**$0**	**$2,466,517**	**$0**	**$0**	
% of Net Plant In Service	***100.0%***	***23.5%***	***51.1%***	***14.1%***	***0.0%***	***0.0%***	***11.4%***	***0.0%***	***0.0%***	

City of Kalama
Water Rate Study
Distribution Storage
Exhibit 13

Fire Protection

	Capacity (Gallons)	Fire Related %	Fire Capacity (Gal)
Kingwood No. 1	0	0.0%	0
Kingwood No. 3	2,000,000	25.0%	500,000
Taylor	200,000	25.0%	50,000
Cemetery	10,000	0.0%	0
Vivian	30,000	0.0%	0
Simmons	6,000	0.0%	0
Upper Gore	10,000	0.0%	0
Lower Gore	30,000	0.0%	0
Jaeger	100,000	0.0%	0
Agate Mountain	70,000	0.0%	0
Confer	80,000	0.0%	0
Lower Green Mtn. [2010]	60,000	0.0%	0
	2,596,000		**550,000**
% Public Fire Protection			21.2%
% Capacity			78.8%

Distribution Main Analysis

Main Size	Length (Feet)	Replacement Cost ($) [1]	Total
< or =3"	45,400	$100	$4,540,000
4"	14,700	100	1,470,000
6"	48,400	140	6,776,000
8"	129,800	160	20,768,000
10"	7,700	180	1,386,000
12"	58,700	200	11,740,000
16"	6,700	250	1,675,000
	311,400		**$48,355,000**

Actual Customer		
1) Total @ 4" Equiv	$31,140,000	**64.4%**
Capacity		
2) Cost of 4" - 10"	$30,400,000	
3) Equiv. 12" for larger	$11,772,000	**22.8%**
Fire Protection		**12.8%**

Notes

[1] - Costs are from other similar utilities

City of Kalama
Water Rate Study
Functionalization and Classification of the Revenue Requirement
Exhibit 14.1

				Customer Related						
					Weighted for:					
	Expenses 2021	Commodity (COM)	Capacity (CAP)	Actual Customer (AC)	Cust. Acctg. (WCA)	Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)	Basis of Classification
Expenses										
Operations & Maintenance										
Salaries - Admin. General	$77,250	$18,121	$39,453	$10,892	$0	$0	$8,784	$0	$0	As Net Plant In Service
Benefits - Admin.	33,120	7,769	16,915	4,670	0	0	3,766	0	0	As Net Plant In Service
Supplies	2,060	483	1,052	290	0	0	234	0	0	As Net Plant In Service
Travel - Administrative	1,025	240	523	145	0	0	117	0	0	As Net Plant In Service
Equipment Maintenance - Admin	13,520	3,172	6,905	1,906	0	0	1,537	0	0	As Net Plant In Service
Miscellaneous	6,150	0	0	0	6,150	0	0	0	0	100.0% WCA
Salaries - Water / Maintenance	236,900	55,572	120,989	33,401	0	0	26,939	0	0	As Net Plant In Service
Overtime Earnings	36,050	8,457	18,411	5,083	0	0	4,099	0	0	As Net Plant In Service
Regular Benefits	139,725	32,777	71,360	19,700	0	0	15,888	0	0	As Net Plant In Service
Uniforms	2,575	604	1,315	363	0	0	293	0	0	As Net Plant In Service
Operating Supplies	10,300	2,416	5,260	1,452	0	0	1,171	0	0	As Net Plant In Service
Fuel Consumed	7,763	1,821	3,964	1,094	0	0	883	0	0	As Net Plant In Service
Inventory - Meters/Pipe/Fittings	66,950	7,853	17,096	4,720	0	33,475	3,807	0	0	50.0% WCMS 50.0% Plant
Small Tools & Minor Equipment	5,150	1,208	2,630	726	0	0	586	0	0	As Net Plant In Service
Equipment Rental	520	122	266	73	0	0	59	0	0	As Net Plant In Service
Repairs & Maintenance - Contracted	10,400	2,440	5,311	1,466	0	0	1,183	0	0	As Net Plant In Service
Equipment Maintenance	46,800	10,978	23,902	6,598	0	0	5,322	0	0	As Net Plant In Service
Vehicle Maintenance	5,200	1,220	2,656	733	0	0	591	0	0	As Net Plant In Service
Salaries - Water/Operations	70,040	16,430	35,771	9,875	0	0	7,964	0	0	As Net Plant In Service
Overtime Earnings (2)	20,600	4,832	10,521	2,904	0	0	2,342	0	0	As Net Plant In Service
Benefits	37,260	8,740	19,029	5,253	0	0	4,237	0	0	As Net Plant In Service
Operating Supplies - Chemicals	72,100	72,100	0	0	0	0	0	0	0	100.0% Comm
Other Professional Services	15,450	3,624	7,891	2,178	0	0	1,757	0	0	As Net Plant In Service
Intergovernmental Professional Services	6,760	1,586	3,452	953	0	0	769	0	0	As Net Plant In Service
Electricity	115,920	96,214	0	0	0	0	0	0	19,706	83.0% Comm 17.0% DA
Repairs & Maintenance	20,800	4,879	10,623	2,933	0	0	2,365	0	0	As Net Plant In Service
ON Call Pay	7,725	1,812	3,945	1,089	0	0	878	0	0	As Net Plant In Service
Benefits (2)	3,605	846	1,841	508	0	0	410	0	0	As Net Plant In Service
Office Computer Supplies	2,060	483	1,052	290	0	0	234	0	0	As Net Plant In Service
Office & Operating Supplies	2,060	483	1,052	290	0	0	234	0	0	As Net Plant In Service
Engineering	515	121	263	73	0	0	59	0	0	As Net Plant In Service
Communications	15,450	3,624	7,891	2,178	0	0	1,757	0	0	As Net Plant In Service
Travel	515	0	0	0	515	0	0	0	0	100.0% WCA
Utilities	7,688	1,803	3,926	1,084	0	0	874	0	0	As Net Plant In Service
Shop Maintenance	1,035	1,035	0	0	0	0	0	0	0	100.0% Comm
Miscellaneous & Training	7,175	1,683	3,664	1,012	0	0	816	0	0	As Net Plant In Service
Hydrant Permit Meter Deposits	5,150	0	0	0	0	0	5,150	0	0	100.0% FP
Total Operations & Maintenance	**$1,113,365**	**$375,549**	**$448,930**	**$123,934**	**$6,665**	**$33,475**	**$105,106**	**$0**	**$19,706**	
Total Operations & Maintenance	**$1,113,365**	**$375,549**	**$448,930**	**$123,934**	**$6,665**	**$33,475**	**$105,106**	**$0**	**$19,706**	

City of Kalama
Water Rate Study
Functionalization and Classification of the Revenue Requirement
Exhibit 14.1

	Expenses 2021	Commodity (COM)	Capacity (CAP)	Customer Related: Actual Customer (AC)	Customer Related Weighted for: Cust. Acctg. (WCA)	Customer Related Weighted for: Meters & Services (WCMS)	Public Fire Protection (FP)	Revenue Related (RR)	Direct Assign. (DA)		Basis of Classification
Depreciation	**$362,935**	**$0**	**$0**	**$0**	**$362,935**	**$0**	**$0**	**$0**	**$0**	100.0%	WCA
Taxes & Transfers											
Accounting Service Fees	$97,850	$0	$0	$0	$97,850	$0	$0	$0	$0	100.0%	WCA
GF Water Utilty Tax	106,425	0	0	0	0	0	0	106,425	0	100.0%	RR
Water Utility Tax - GFCF	88,688	0	0	0	0	0	0	88,688	0	100.0%	RR
Trsf. To 410 Equip Rsve PW	12,480	0	0	0	0	0	0	12,480	0	100.0%	RR
Trsf. To 410 Equip Rsve - WTP Equip. Repl.	0	0	0	0	0	0	0	0	0	100.0%	RR
Trsf. To 410 Equip. Reserv - Meter Repl.	31,200	0	0	0	0	0	0	31,200	0	100.0%	RR
Transfer - Benefit Reserve 107	4,140	0	0	0	0	0	0	4,140	0	100.0%	RR
Transfer To Audit #115	2,060	0	0	0	0	0	0	2,060	0	100.0%	RR
Transfer Out To 115 - Insurance	72,100	0	0	0	0	0	0	72,100	0	100.0%	RR
Department of Revenue	86,533	0	0	0	0	0	0	86,533	0	100.0%	RR
Total Taxes & Transfers	**$501,476**	**$0**	**$0**	**$0**	**$97,850**	**$0**	**$0**	**$403,626**	**$0**		
Reserve Funding	**$24,946**	**$5,852**	**$12,740**	**$3,517**	**$0**	**$0**	**$2,837**	**$0**	**$0**	As Net Plant In Service	
Total Revenue Requirement	**$2,002,722**	**$381,401**	**$461,671**	**$127,451**	**$467,450**	**$33,475**	**$107,942**	**$403,626**	**$19,706**		
Less: Other Revenues											
Other Misc. Revenue	$505	$96	$116	$32	$118	$8	$27	$102	$5	As Total Revenue Requirement	
Water Utility Tax	195,113	37,157	44,978	12,417	45,541	3,261	10,516	39,323	1,920	As Total Revenue Requirement	
Water - Other Sales Tax Collection	2,374	452	547	151	554	40	128	478	23	As Total Revenue Requirement	
Hydrant Permit Meter Deposits	5,050	962	1,164	321	1,179	84	272	1,018	50	As Total Revenue Requirement	
Engineering Serv - Reimbursement	505	96	116	32	118	8	27	102	5	As Total Revenue Requirement	
Sale of Surplus - Scrap Metal	505	96	116	32	118	8	27	102	5	As Total Revenue Requirement	
Water - Labor	10,100	1,923	2,328	643	2,357	169	544	2,036	99	As Total Revenue Requirement	
Water - Parts	20,200	3,847	4,657	1,286	4,715	338	1,089	4,071	199	As Total Revenue Requirement	
Total Other Revenues	**$234,351**	**$44,630**	**$54,023**	**$14,914**	**$54,699**	**$3,917**	**$12,631**	**$47,231**	**$2,306**		
Total Net Revenue Requirement	**$1,768,371**	**$336,771**	**$407,648**	**$112,537**	**$412,751**	**$29,558**	**$95,311**	**$356,395**	**$17,400**		

City of Kalama
Water Rate Study
Allocation of Rate Base
Exhibit 15

	Net Revenue Requirement	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com / Ind - Inside	Coml / Ind - Outside	*Basis of Allocation*
Commodity	$5,088,221	$1,022,888	$1,164,207	$235,493	$0	$647,686	$2,017,947	*(COM)*
Capacity	$11,077,861	$1,603,735	$2,696,264	$487,136	$0	$1,818,285	$4,472,442	*(CAP)*
Actual Customer	$3,058,203	$1,459,563	$1,308,522	$44,864	$1,495	$151,041	$92,718	*(AC)*
Cust. Acctg.	$0	$0	$0	$0	$0	$0	$0	*(WCA)*
Meters & Services	$0	$0	$0	$0	$0	$0	$0	*(WCMS)*
Public Fire Protection	$2,466,517	$1,479,607	$0	$68,220	$0	$918,690	$0	*(FP)*
Revenue Related	$0	$0	$0	$0	$0	$0	$0	*(RR)*
Direct Assign.	$0	$0	$0	$0	$0	$0	$0	*(DA)*
Net Revenue Requirement	**$21,690,803**	**$5,565,793**	**$5,168,993**	**$835,712**	**$1,495**	**$3,535,702**	**$6,583,107**	

City of Kalama
Water Rate Study
Allocation of Revenue Requirement
Exhibit 16

	Net Revenue Requirement	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com / Ind - Inside	Coml / Ind - Outside	*Basis of Allocation*
Commodity	$336,771	$67,701	$77,055	$15,586	$0	$42,868	$133,560	*(COM)*
Capacity	$407,648	$59,015	$99,218	$17,926	$0	$66,910	$164,579	*(CAP)*
Actual Customer	$112,537	$53,710	$48,152	$1,651	$55	$5,558	$3,412	*(AC)*
Cust. Acctg.	$412,751	$186,416	$167,125	$28,077	$0	$19,291	$11,842	*(WCA)*
Meters & Services	$29,558	$10,894	$9,954	$875	$0	$3,051	$4,784	*(WCMS)*
Public Fire Protection	$95,311	$57,175	$0	$2,636	$0	$35,500	$0	*(FP)*
Revenue Related	$356,395	$64,058	$123,134	$10,985	$70	$32,275	$125,873	*(RR)*
Direct Assign.	$17,400	$0	$6,366	$0	$0	$0	$11,034	*(DA)*
Net Revenue Requirement	**$1,768,371**	**$498,969**	**$531,003**	**$77,736**	**$125**	**$205,453**	**$455,085**	

City of Kalama
Water Rate Study
Summary of Cost of Service Analysis
Exhibit 17

	2021 Expenses	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com / Ind - Inside	Coml / Ind - Outside	*Notes*
Revenues at Present Rates	$1,650,788	$296,712	$570,343	$50,882	$325	$149,494	$583,033	
Allocated Revenue Requirement	$1,768,371	$498,969	$531,003	$77,736	$125	$205,453	$455,085	
Bal/(Def) of Funds	($117,583)	($202,257)	$39,340	($26,855)	$200	($55,959)	$127,948	
Allocated Rate Base	$21,690,803	$5,565,793	$5,168,993	$835,712	$1,495	$3,535,702	$6,583,107	
Present Return on Rate Base	*-0.5%*	*-3.6%*	*0.8%*	*-3.2%*	*13.4%*	*-1.6%*	*1.9%*	
Proposed Return Component	($0)	($230,410)	$180,915	($34,596)	$52	($146,369)	$230,409	
Proposed Rate of Return	0.0%	-4.1%	3.5%	-4.1%	3.5%	-4.1%	3.5%	
Proposed Rate Revenues	$1,768,371	$268,559	$711,918	$43,140	$178	$59,083	$685,493	
Bal/(Def) of Funds	($117,583)	$28,153	($141,575)	$7,742	$148	$90,410	($102,461)	
Plus: Taxes	($6,226)	$1,491	($7,497)	$410	$8	$4,787	($5,426)	
Required % Change in Rates	**7.5%**	**-10.0%**	**26.1%**	**-16.0%**	**-47.8%**	**-63.7%**	**18.5%**	
[1] Rate of return equals:		*(29,644)*	*149,072*	*(8,152)*	*(155)*	*(95,198)*	*107,886*	
Reflects the Current Cost of Debt		19.7%	16.5%	-21.2%	-4.1%	-66.1%	-6.3%	

City of Kalama
Water Rate Study
Average Unit Costs
Exhibit 18

	Total	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com / Ind - Inside	Coml / Ind - Outside	*Notes*
Consumption Related								
Commodity $/CCF	$0.90	$0.90	$0.90	$0.90	$0.00	$0.90	$0.90	
Capacity $/CCF	1.09	0.78	1.16	1.03	0.00	1.40	1.11	
Fire/Revenue $/CCF	1.21	1.61	1.44	0.79	#DIV/0!	1.42	0.85	
Total - $ / CCF	**$3.19**	**$3.29**	**$3.49**	**$2.72**	**#DIV/0!**	**$3.72**	**$2.85**	
Customer Related								
Total $/Acct.	**$22.61**	**$21.43**	**$21.45**	**$85.01**	**$4.59**	**$23.02**	**$26.93**	
Return Component $/CCF	($0.00)	($3.06)	$2.11	($1.99)	#DIV/0!	($3.07)	$1.55	
Average Total Cost $/CCF	$4.72	$3.56	$8.30	$2.49	#DIV/0!	$1.24	$4.61	
Outside Surcharge			133%		#DIV/0!		272%	
Average Current Costs $/CCF		$3.94	$6.65	$2.93	#DIV/0!	$3.13	$3.92	
			69%		#DIV/0!		25%	
Basic Data:								
Water Consumption (CCF)	374,839	75,354	85,765	17,348	0	47,714	148,658	
Number of Accounts	2,045	976	875	30	1	101	62	

City of Kalama
Water Utility Rate Study
Pumping Zone Surcharge - Average Unit Costs
Based on Direct Assignments
Exhibit 19

	Total Cost	Total Outside Consumption CCFs	Cost Per CCF	Pump Zone 1 Charge	Pump Zone 2 Charge	Pump Zone 3 Charge
Direct Assignments	$17,400	234,423	$0.07	$0.07	$0.15	$0.22

Notes

Pump Zone 1 includes the following zone(s): 584, 701, 703, 707, 820, 830, 834, 866
Pump Zone 2 includes the following zone(s): 929, 1101
Pump Zone 3 includes the following zone(s): 1116

Residential Rates

	Present Rates	*Proposed*				
		2021	**2022**	**2023**	**2024**	**2025**
Fixed Charge ($/Acct./Bi-Mo)						
Inside						
All Sizes	$10.70	$11.50	$12.36	$13.47	$14.68	$16.00
Outside						
All Sizes	$19.80	$21.28	$22.87	$24.92	$27.16	$29.60
Volume Charge ($/CCF)						
Inside						
All Usage	$2.15	$2.31	$2.48	$2.70	$2.94	$3.20
Outside						
All Usage	$3.98	$4.27	*$4.59*	*$5.00*	*$5.44*	*$5.92*

Multi-Family Rates

	Present Rates	*Proposed*				
		2021	**2022**	**2023**	**2024**	**2025**
Meter Charge ($/Acct./Mo)						
Inside						
3/4"	$16.90	$18.17	$19.53	$21.29	$23.21	$25.30
1"	28.15	30.26	32.53	35.46	38.65	42.13
1 1/2"	54.00	58.05	62.40	68.02	74.14	80.81
2"	90.05	96.80	104.06	113.43	123.64	134.77
3"	181.25	194.84	209.45	228.30	248.85	271.25
Outside						
3/4"	$31.27	$33.61	$36.13	$39.39	$42.94	$46.81
1"	52.08	55.98	60.18	65.60	71.50	77.94
2"	99.90	179.08	192.51	209.85	228.73	249.32
Volume Charge ($/CCF)						
Inside						
All Usage	$2.15	$2.31	$2.48	$2.70	$2.94	$3.20
Outside						
All Usage	$3.98	$4.27	$4.59	$5.00	$5.44	$5.92

Commercial Rates

	Present Rates	*Proposed*				
		2021	**2022**	**2023**	**2024**	**2025**
Meter Charge ($/Acct./Mo)						
Inside						
3/4"	$12.95	$13.92	$14.96	$16.31	$17.78	$19.38
1"	16.30	17.52	18.83	20.52	22.37	24.38
1.5"	76.55	82.29	88.46	96.42	105.10	114.56
2"	129.45	139.16	149.60	163.06	177.74	193.74
3"	197.00	211.77	227.65	248.14	270.47	294.81
4"	264.55	284.39	305.72	333.23	363.22	395.91
10"	788.00	847.10	910.63	992.59	1,081.92	1,179.29
Outside						
3/4"	$19.43	$20.88	$22.44	$24.46	$26.67	$29.07
1"	24.45	26.28	28.25	30.78	33.56	36.57
1.5"	114.83	123.44	132.69	144.63	157.65	171.84
2"	194.18	208.74	224.40	244.59	266.61	290.61
3"	295.50	317.66	341.48	372.21	405.71	442.22
4"	396.83	426.59	458.58	499.85	544.83	593.87
10"	1,182.00	1,270.65	1,365.95	1,488.89	1,622.88	1,768.94
Volume Charge ($/CCF)						
Inside						
All Usage	$2.15	$2.31	$2.48	$2.70	$2.94	$3.20
Outside						
All Usage	$3.23	$3.47	$3.72	$4.05	$4.41	$4.80

Sewer Technical Appendix

City of Kalama
Sewer Rate Study
Summary of the Revenue Requirement
Exhibit 1

	Budget				*Projected*						
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Revenues											
Total Rate Revenues	$1,623,553	$1,656,024	$1,689,144	$1,722,927	$1,757,386	$1,792,534	$1,828,384	$1,864,952	$1,902,251	$1,940,296	$1,979,102
Total Other Revenues	179,100	188,811	199,055	209,860	221,259	233,283	248,267	259,324	264,477	269,733	275,094
Total Source of Funds	**$1,802,653**	**$1,844,835**	**$1,888,199**	**$1,932,788**	**$1,978,645**	**$2,025,817**	**$2,076,652**	**$2,124,276**	**$2,166,728**	**$2,210,029**	**$2,254,196**
Expenses											
Total Operations & Maintanence	$907,800	$898,950	$928,079	$958,158	$989,220	$1,022,602	$1,057,129	$1,092,842	$1,129,782	$1,167,993	$1,207,518
Taxes & Transfers	347,000	372,222	387,629	403,749	420,618	438,273	459,088	476,079	487,242	498,680	510,399
Rate Funded Capital	250,000	315,000	410,000	500,000	600,000	715,000	715,000	715,000	800,000	900,000	950,000
Net Debt Service	295,496	295,496	295,496	295,496	295,496	295,496	835,127	835,127	539,631	539,631	539,631
Reserve Funding	2,357	54,248	57,911	75,590	93,018	104,683	(273,127)	(147,061)	130,076	99,703	122,444
Total Revenue Requirement	**$1,802,653**	**$1,935,916**	**$2,079,115**	**$2,232,993**	**$2,398,352**	**$2,576,053**	**$2,793,218**	**$2,971,987**	**$3,086,732**	**$3,206,007**	**$3,329,993**
Balance/(Deficiency) of Funds	$0	($91,081)	($190,916)	($300,205)	($419,707)	($550,236)	($716,566)	($847,711)	($920,004)	($995,978)	($1,075,797)
Bal as a % of Rate Adj. Required	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%	39.2%	45.5%	48.4%	51.3%	54.4%
Proposed Rate Adjustment	**0.0%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**6.5%**	**4.5%**	**2.0%**	**2.0%**	**2.0%**
Add'l Revenue with Rate Adj.	$0	$91,081	$190,916	$300,205	$419,707	$550,236	$716,566	$847,711	$920,004	$995,978	$1,075,797
Bal/(Def) After Rate Adj.	$0	$0	($0)	($0)	$0	$0	$0	$0	$0	$0	$0
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Debt Service Coverage Ratio (all debt)											
Before Rate Adjustment	2.42	2.56	2.58	2.59	2.60	2.61	0.92	0.92	1.43	1.43	1.43
After Proposed Rate Adjustment	2.42	2.87	3.22	3.60	4.02	4.47	1.78	1.94	3.14	3.28	3.42
Average Residential Customer Bill	$82.05										
Customer Bill on Proposed Adjustment	$82.05	$86.56	$91.32	$96.35	$101.65	$107.24	$114.21	$119.35	$121.73	$124.17	$126.65
Bill Difference - Monthly	$0.00	$4.51	$4.76	$5.02	$5.30	$5.59	$6.97	$5.14	$2.39	$2.43	$2.48
Cumulative Bill Difference	$0.00	$4.51	$9.27	$14.30	$19.60	$25.19	$32.16	$37.30	$39.68	$42.12	$44.60
Fund 401 - W / S Operating Fund	$113,469	$169,123	$229,015	$307,273	$403,830	$513,074	$243,713	$98,354	$230,064	$332,566	$458,948
Fund 413 - I & I Improvement Reserve	*$368,453*	*$417,390*	*$466,816*	*$446,359*	*$425,698*	*$404,830*	*$383,753*	*$362,466*	*$340,965*	*$319,250*	*$297,317*
Fund 415 - Sewer Improvement Reserve	*$1,211,000*	*$1,428,130*	*$1,226,417*	*$516,630*	*$380,580*	*$391,677*	*$621,952*	*$859,057*	*$1,002,651*	*$1,152,392*	*$1,131,923*
Fund 412 - Sewer Loan Reserve	*$267,650*	*$270,327*	*$273,030*	*$275,760*	*$278,518*	*$281,303*	*$284,116*	*$286,957*	*$289,827*	*$292,725*	*$295,652*
Fund 410 - Public Works Equipment Reserve		*$143,055*	*$157,529*	*$172,670*	*$188,506*	*$205,063*	*$222,374*	*$240,468*	*$259,377*	*$279,136*	*$299,779*
Total Ending Fund Balance	***$1,579,453***	***$2,428,024***	***$2,352,807***	***$1,718,693***	***$1,677,131***	***$1,795,947***	***$1,755,908***	***$1,847,302***	***$2,122,885***	***$2,376,069***	***$2,483,621***

City of Kalama
Sewer Rate Study
Excalations
Exhibit 2

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	*Notes*
Revenues												
Res - Cust Growth	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Com - Cust Growth	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
All - Customer Growth	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Misc Revenues	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses												
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Medical Benefits	Budget	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	
Materials & Supplies	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Equipment	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
Miscellaneous	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Utilities	Budget	3.5%	3.5%	3.5%	3.5%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Rate Adjustment	0.0%	5.5%	5.5%	5.5%	5.5%	5.5%	6.5%	4.5%	2.0%	2.0%	2.0%	
Insurance	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Interest	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
New Debt Service												
Low Interest Loans												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%	
Revenue Bond												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	3.5%	3.8%	4.0%	4.2%	4.5%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	

City of Kalama
Sewer Rate Study
Revenue Requirement
Exhibit 3

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	*Notes*
Revenues												
Rate Revenues												
Residential	$841,458	$858,287	$875,453	$892,962	$910,821	$929,038	$947,618	$966,571	$985,902	$1,005,620	$1,025,733	As Res - Cust Growth
Multi-Family	278,898	284,476	290,166	295,969	301,889	307,926	314,085	320,367	326,774	333,310	339,976	As Res - Cust Growth
Com / Ind	503,196	513,260	523,525	533,996	544,676	555,569	566,681	578,014	589,575	601,366	613,393	As Com - Cust Growth
Total Rate Revenues	**$1,623,553**	**$1,656,024**	**$1,689,144**	**$1,722,927**	**$1,757,386**	**$1,792,534**	**$1,828,384**	**$1,864,952**	**$1,902,251**	**$1,940,296**	**$1,979,102**	
Other Revenues												
Other Misc. Revenue	$500	$505	$510	$515	$520	$526	$531	$536	$541	$547	$552	As Misc Revenues
Engineering Serv - Reimbursement	500	505	510	515	520	526	531	536	541	547	552	As Misc Revenues
Sewer Utility Tax	176,000	185,680	195,892	206,666	218,033	230,025	244,977	256,001	261,121	266,343	271,670	As Rate Adjustment
Sewer - Other Sales Tax Collection	100	101	102	103	104	105	106	107	108	109	110	As Misc Revenues
Sale of Surplus - Scrap Metal	500	505	510	515	520	526	531	536	541	547	552	As Misc Revenues
Sewer - Labor	500	505	510	515	520	526	531	536	541	547	552	As Misc Revenues
Sewer - Parts	1,000	1,010	1,020	1,030	1,041	1,051	1,062	1,072	1,083	1,094	1,105	As Misc Revenues
Total Other Revenues	**$179,100**	**$188,811**	**$199,055**	**$209,860**	**$221,259**	**$233,283**	**$248,267**	**$259,324**	**$264,477**	**$269,733**	**$275,094**	
Total Revenues	**$1,802,653**	**$1,844,835**	**$1,888,199**	**$1,932,788**	**$1,978,645**	**$2,025,817**	**$2,076,652**	**$2,124,276**	**$2,166,728**	**$2,210,029**	**$2,254,196**	

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	*Notes*
Expenses												
General Sewer Operations												
Salaries - Sewer/Admin. General	$60,000	$61,800	$63,654	$65,564	$67,531	$69,556	$71,643	$73,792	$76,006	$78,286	$80,635	As Salary
Benefits - Admin	25,000	25,875	26,781	27,718	28,688	29,692	30,731	31,807	32,920	34,072	35,265	As Benefits
Office & Oper. Supplies	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Materials & Supplies
Travel - Administrative	500	513	525	538	552	566	580	594	609	624	640	As Miscellaneous
Equipment Maintenance - Office	11,000	11,330	11,670	12,020	12,381	12,752	13,135	13,529	13,934	14,353	14,783	As Materials & Supplies
Miscellaneous - Admin	5,000	5,125	5,253	5,384	5,519	5,657	5,798	5,943	6,092	6,244	6,400	As Miscellaneous
Salaries - Sewer/Maintenance	130,000	133,900	137,917	142,055	146,316	150,706	155,227	159,884	164,680	169,621	174,709	As Salary
Overtime Earnings	40,000	41,200	42,436	43,709	45,020	46,371	47,762	49,195	50,671	52,191	53,757	As Salary
Benefits	85,000	87,975	91,054	94,241	97,539	100,953	104,487	108,144	111,929	115,846	119,901	As Benefits
Operating Supplies	14,000	14,420	14,853	15,298	15,757	16,230	16,717	17,218	17,735	18,267	18,815	As Materials & Supplies
Fuel Consumed	6,500	6,728	6,963	7,207	7,459	7,757	8,068	8,390	8,726	9,075	9,438	As Utilities
Inventory Purchase - Pipe/Fittings	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Materials & Supplies
Small Tools	1,500	1,545	1,591	1,639	1,688	1,739	1,791	1,845	1,900	1,957	2,016	As Materials & Supplies
Equipment Rental	500	520	541	562	585	608	633	658	684	712	740	As Equipment
Repairs & Maintenance - Contracted	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	As Materials & Supplies
Equipment Maintenance	20,000	20,800	21,632	22,497	23,397	24,333	25,306	26,319	27,371	28,466	29,605	As Equipment
Vehicle Maintenance	1,000	1,040	1,082	1,125	1,170	1,217	1,265	1,316	1,369	1,423	1,480	As Equipment
Salaries - Sewer/Operations	70,000	86,520	89,116	91,789	94,543	97,379	100,300	103,309	106,409	109,601	112,889	As Salary
Overtime Earnings (2)	20,000	20,600	21,218	21,855	22,510	23,185	23,881	24,597	25,335	26,095	26,878	As Salary
Benefits (2)	40,000	41,400	42,849	44,349	45,901	47,507	49,170	50,891	52,672	54,516	56,424	As Benefits
Uniforms	700	725	750	776	803	831	860	891	922	954	987	As Benefits
Operating Supplies - Chemicals	30,000	30,900	31,827	32,782	33,765	34,778	35,822	36,896	38,003	39,143	40,317	As Materials & Supplies
Other Professional Services	600	618	637	656	675	696	716	738	760	783	806	As Materials & Supplies
Intergovernmental Fees/Services	5,000	5,150	5,305	5,464	5,628	5,796	5,970	6,149	6,334	6,524	6,720	As Materials & Supplies
Professional Services	6,000	6,180	6,365	6,556	6,753	6,956	7,164	7,379	7,601	7,829	8,063	As Salary
Utilities	105,000	108,675	112,479	116,415	120,490	125,310	130,322	135,535	140,956	146,594	152,458	As Utilities
Repairs & Maintenance	15,000	15,450	15,914	16,391	16,883	17,389	17,911	18,448	19,002	19,572	20,159	As Materials & Supplies
Contracted Repairs	2,000	2,060	2,122	2,185	2,251	2,319	2,388	2,460	2,534	2,610	2,688	As Materials & Supplies
Contract Services - Disposal	167,000	120,000	124,200	128,547	133,046	138,368	143,903	149,659	155,645	161,871	168,346	As Utilities
ON Call Pay	7,500	7,725	7,957	8,195	8,441	8,695	8,955	9,224	9,501	9,786	10,079	As Salary
Benefits (3)	3,500	3,623	3,749	3,881	4,016	4,157	4,302	4,453	4,609	4,770	4,937	As Benefits
Office Computer Supplies	3,000	3,090	3,183	3,278	3,377	3,478	3,582	3,690	3,800	3,914	4,032	As Materials & Supplies
Engineering	500	515	530	546	563	580	597	615	633	652	672	As Salary
Communications	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	As Materials & Supplies
Travel & Training	1,000	1,025	1,051	1,077	1,104	1,131	1,160	1,189	1,218	1,249	1,280	As Miscellaneous
Facilities Maintenance	1,000	1,030	1,061	1,093	1,126	1,159	1,194	1,230	1,267	1,305	1,344	As Materials & Supplies
Miscellaneous	1,000	1,025	1,051	1,077	1,104	1,131	1,160	1,189	1,218	1,249	1,280	As Miscellaneous
Total General Sewer Operations	**$907,800**	**$898,950**	**$928,079**	**$958,158**	**$989,220**	**$1,022,602**	**$1,057,129**	**$1,092,842**	**$1,129,782**	**$1,167,993**	**$1,207,518**	
Total Operations & Maintanence	**$907,800**	**$898,950**	**$928,079**	**$958,158**	**$989,220**	**$1,022,602**	**$1,057,129**	**$1,092,842**	**$1,129,782**	**$1,167,993**	**$1,207,518**	

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	*Notes*
Taxes & Transfers												
Accounting Service Fees	$80,000	$82,400	$84,872	$87,418	$90,041	$92,742	$95,524	$98,390	$101,342	$104,382	$107,513	As Salary
Trsf. TO 410 Equip Rsve PW	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763	As Equipment
Transfer - Benefit Reserve 107	3,000	3,105	3,214	3,326	3,443	3,563	3,688	3,817	3,950	4,089	4,232	As Benefits
Transfer TO Audit # 115	2,000	2,050	2,101	2,154	2,208	2,263	2,319	2,377	2,437	2,498	2,560	As Miscellaneous
Transfer Out TO 115-Insurance	46,000	47,150	48,329	49,537	50,775	52,045	53,346	54,680	56,047	57,448	58,884	As Miscellaneous
General Fund Sewer Utility Tax	96,000	101,280	106,850	112,727	118,927	125,468	133,624	139,637	142,429	145,278	148,184	As Rate Adjustment
Sewer Utility Tax - GFCF	80,000	84,400	89,042	93,939	99,106	104,557	111,353	116,364	118,691	121,065	123,486	As Rate Adjustment
Department of Revenue	28,000	39,357	40,242	41,149	42,080	43,035	44,051	45,023	45,923	46,841	47,777	3.852% + 1.5%
Total Taxes & Transfers	**$347,000**	**$372,222**	**$387,629**	**$403,749**	**$420,618**	**$438,273**	**$459,088**	**$476,079**	**$487,242**	**$498,680**	**$510,399**	
Rate Funded Capital	**$250,000**	**$315,000**	**$410,000**	**$500,000**	**$600,000**	**$715,000**	**$715,000**	**$715,000**	**$800,000**	**$900,000**	**$950,000**	$336,000 Estimated Depreciation
Debt Service												
DOE - SRF / WWTP Construction Loan	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$0	$0	$0	Debt Schedule
New Revenue bonds	0	0	0	0	0	0	539,631	539,631	539,631	539,631	539,631	Calculated @ 4% for 20 Yrs
New Low interest loans	0	0	0	0	0	0	0	0	0	0	0	Calculated @ 2.3% for 20 Yrs
Total Debt Service	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$835,127	$835,127	$539,631	$539,631	$539,631	
Less Other Funding	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Debt Service	**$295,496**	**$295,496**	**$295,496**	**$295,496**	**$295,496**	**$295,496**	**$835,127**	**$835,127**	**$539,631**	**$539,631**	**$539,631**	
Reserve Funding												
Fund 401 - W / S Operating Fund	$2,357	$54,248	$57,911	$75,590	$93,018	$104,683	($273,127)	($147,061)	$130,076	$99,703	$122,444	
Fund 415 - Sewer Improvement Reserve	0	0	0	0	0	0	0	0	0	0	0	
Fund 412 - Sewer Loan Reserve	0	0	0	0	0	0	0	0	0	0	0	
Total Reserve Funding	**$2,357**	**$54,248**	**$57,911**	**$75,590**	**$93,018**	**$104,683**	**($273,127)**	**($147,061)**	**$130,076**	**$99,703**	**$122,444**	
Total Revenue Requirement	**$1,802,653**	**$1,935,916**	**$2,079,115**	**$2,232,993**	**$2,398,352**	**$2,576,053**	**$2,793,218**	**$2,971,987**	**$3,086,732**	**$3,206,007**	**$3,329,993**	
Balance/(Deficiency) of Funds	$0	($91,081)	($190,916)	($300,205)	($419,707)	($550,236)	($716,566)	($847,711)	($920,004)	($995,978)	($1,075,797)	
Bal as a % of Rate Adj. Required	0.0%	5.5%	11.3%	17.4%	23.9%	30.7%	39.2%	45.5%	48.4%	51.3%	54.4%	
Proposed Rate Adjustment	**0.0%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**5.5%**	**6.5%**	**4.5%**	**2.0%**	**2.0%**	**2.0%**	
Add'l Revenue with Rate Adj.	$0	$91,081	$190,916	$300,205	$419,707	$550,236	$716,566	$847,711	$920,004	$995,978	$1,075,797	
Bal/(Def) After Rate Adj.	$0	$0	($0)	($0)	$0	$0	$0	$0	$0	$0	$0	
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	
Average Residential Customer Bill	$82.05	(Flat rate + 3 CCF)										
Customer Bill on Proposed Adjustment	$82.05	$86.56	$91.32	$96.35	$101.65	$107.24	$114.21	$119.35	$121.73	$124.17	$126.65	
Bill Difference - Monthly		4.51	4.76	5.02	5.30	5.59	6.97	5.14	2.39	2.43	2.48	
Cumulative Bill Difference		4.51	9.27	14.30	19.60	25.19	32.16	37.30	39.68	42.12	44.60	
Debt Service Coverage Ratio (all debt)												
Before Rate Adjustment	2.42	2.56	2.58	2.59	2.60	2.61	0.92	0.92	1.43	1.43	1.43	
After Proposed Rate Adjustment	2.42	2.87	3.22	3.60	4.02	4.47	1.78	1.94	3.14	3.28	3.42	

	Budget	*Projected*									
	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Reserve Funds											
Total Beginning Balance	**$1,811,000**	**$2,089,791**	**$2,428,024**	**$2,352,807**	**$1,718,693**	**$1,677,131**	**$1,795,947**	**$1,755,908**	**$1,847,302**	**$2,122,885**	**$2,376,069**
Fund 401 - W / S Operating Fund											
Beginning Balance (50%)	**$110,000**	**$113,469**	**$169,123**	**$229,015**	**$307,273**	**$403,830**	**$513,074**	**$243,713**	**$98,354**	**$230,064**	**$332,566**
Plus: Revenue	1,802,653	1,935,916	2,079,115	2,232,993	2,398,352	2,576,053	2,793,218	2,971,987	3,086,732	3,206,007	3,329,993
Interest	1,112	1,406	1,981	2,668	3,538	4,562	3,765	1,702	1,634	2,799	3,938
Less: Expenses	(907,800)	(898,950)	(928,079)	(958,158)	(989,220)	(1,022,602)	(1,057,129)	(1,092,842)	(1,129,782)	(1,167,993)	(1,207,518)
Less: Rate-Funded Capital	(250,000)	(315,000)	(410,000)	(500,000)	(600,000)	(715,000)	(715,000)	(715,000)	(800,000)	(900,000)	(950,000)
Less: Taxes & Transfers	(347,000)	(372,222)	(387,629)	(403,749)	(420,618)	(438,273)	(459,088)	(476,079)	(487,242)	(498,680)	(510,399)
Less: Transfer to 415	(295,496)	(295,496)	(295,496)	(295,496)	(295,496)	(295,496)	(835,127)	(835,127)	(539,631)	(539,631)	(539,631)
Ending Balance	**$113,469**	**$169,123**	**$229,015**	**$307,273**	**$403,830**	**$513,074**	**$243,713**	**$98,354**	**$230,064**	**$332,566**	**$458,948**
Target Balance - 90 Days O&M	*$224,000*	*$222,000*	*$229,000*	*$236,000*	*$244,000*	*$252,000*	*$261,000*	*$269,000*	*$279,000*	*$288,000*	*$298,000*
Fund 413 - I & I Improvement Reserve											
Beginning Balance	**$320,000**	**$368,453**	**$417,390**	**$466,816**	**$446,359**	**$425,698**	**$404,830**	**$383,753**	**$362,466**	**$340,965**	**$319,250**
Plus: Additions	0	0	0	0	0	0	0	0	0	0	0
Plus: Loan repayment w/interest	70,027	70,027	70,027	0	0	0	0	0	0	0	0
Interest	3,425	3,910	4,399	4,543	4,339	4,132	3,923	3,713	3,500	3,285	3,067
Less: Uses of Funds	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)	(25,000)
Ending Balance	**$368,453**	**$417,390**	**$466,816**	**$446,359**	**$425,698**	**$404,830**	**$383,753**	**$362,466**	**$340,965**	**$319,250**	**$297,317**
Fund 415 - Sewer Improvement Reserve											
Beginning Balance [1]	**$1,000,000**	**$1,211,000**	**$1,428,130**	**$1,226,417**	**$516,630**	**$380,580**	**$391,677**	**$621,952**	**$859,057**	**$1,002,651**	**$1,152,392**
Plus: Hook Up Fees	200,000	204,000	208,080	212,242	216,486	220,816	225,232	229,737	234,332	239,019	243,799
Plus: Additions	0	0	0	0	0	0	0	0	0	0	0
Plus: Transfers from 401	295,496	295,496	295,496	295,496	295,496	295,496	835,127	835,127	539,631	539,631	539,631
Interest	11,000	13,130	13,207	8,672	4,464	3,842	5,043	7,368	9,262	10,722	11,365
Less: Debt Service	(295,496)	(295,496)	(295,496)	(295,496)	(295,496)	(295,496)	(835,127)	(835,127)	(539,631)	(539,631)	(539,631)
Less: Capital Project Funding	0	0	(423,000)	(930,700)	(357,000)	(213,562)	0	0	(100,000)	(100,000)	(275,632)
Ending Balance	**$1,211,000**	**$1,428,130**	**$1,226,417**	**$516,630**	**$380,580**	**$391,677**	**$621,952**	**$859,057**	**$1,002,651**	**$1,152,392**	**$1,131,923**
Target Balance - Depreciation Exp.	$350,000	*$361,000*	*$372,000*	*$383,000*	*$394,000*	*$406,000*	*$418,000*	*$431,000*	*$444,000*	*$457,000*	*$471,000*
Fund 412 - Sewer Loan Reserve											
Beginning Balance	**$265,000**	**$267,650**	**$270,327**	**$273,030**	**$275,760**	**$278,518**	**$281,303**	**$284,116**	**$286,957**	**$289,827**	**$292,725**
Plus: Additions	0	0	0	0	0	0	0	0	0	0	0
Interest	2,650	2,677	2,703	2,730	2,758	2,785	2,813	2,841	2,870	2,898	2,927
Less: Uses of Funds	0	0	0	0	0	0	0	0	0	0	0
Ending Balance	**$267,650**	**$270,327**	**$273,030**	**$275,760**	**$278,518**	**$281,303**	**$284,116**	**$286,957**	**$289,827**	**$292,725**	**$295,652**
Fund 410 - Public Works Equipment Reserve											
Beginning Balance (50%)	**$116,000**	**$129,220**	**$143,055**	**$157,529**	**$172,670**	**$188,506**	**$205,063**	**$222,374**	**$240,468**	**$259,377**	**$279,136**
Plus: Additions	12,000	12,480	12,979	13,498	14,038	14,600	15,184	15,791	16,423	17,080	17,763
Interest	1,220	1,355	1,495	1,643	1,797	1,958	2,127	2,303	2,487	2,679	2,880
Less: Uses of Funds	0	0	0	0	0	0	0	0	0	0	0
Ending Balance	**$129,220**	**$143,055**	**$157,529**	**$172,670**	**$188,506**	**$205,063**	**$222,374**	**$240,468**	**$259,377**	**$279,136**	**$299,779**
Total Reserve Funds	**$2,089,791**	**$2,428,024**	**$2,352,807**	**$1,718,693**	**$1,677,131**	**$1,795,947**	**$1,755,908**	**$1,847,302**	**$2,122,885**	**$2,376,069**	**$2,483,621**

Notes
As All - Customer Growth
Escalated 3% per year

City of Kalama
Sewer Rate Study
Capital Improvement Plan
Exhibit 4

Inflation	2.7%

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	*Total*
Funded Projects												
Sewer Line Replacement	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$275,000
Blowers	0	0	11,000	0	0	0	0	0	0	0	0	11,000
Dissolved Oxygen Sensors	0	26,000	0	0	0	0	0	0	0	0	0	26,000
Influent / Blower Rockwell Drives	9,000	0	0	0	0	0	0	0	0	0	0	9,000
Secondary Clarifier Mech. Replac.	0	0	310,000	0	0	0	0	0	0	0	0	310,000
Influent, Scum, RAS, WAS, Plant Drain, Effluent Pumps	0	0		50,000	0	0	0	0	0	0	0	50,000
Sludge Transfer Pump	0	0		15,100	0	0	0	0	0	0	0	15,100
Sludge Wasting Pump	0	0		13,600	0	0	0	0	0	0	0	13,600
Grit Pump Replacement	0	12,000	12,000	0	0	0	0	0	0	0	0	24,000
Plant Maintenance Software	0	2,000	0	0	0	0	0	0	0	0	0	2,000
Fine Screen Gearbox	0	12,000	0	0	0	0	0	0	0	0	0	12,000
Unfunded Projects												
Pipe Burst Old AC in Old Town North of Elm	$0	$0	$500,000	$2,000,000	$0	$0	$0	$0	$0	$0	$0	$2,500,000
Columbia Terrace Estates Storm Sanitary Separation	0	0	0	0	0	0	0	0	0	1,000,000	0	1,000,000
Sewer Plant Expansion - Design / Permitting	0	0	0	952,000	0	0	0	0	0	0	0	952,000
Sewer Plant Expansion - Construction	0	0	0	0	0	900,000	3,600,000	0	0	0	0	4,500,000
Sewer Line - Hendrickson to WWTP	0	0	0	0	0	0	3,840,000	0	0	0	0	3,840,000
Old 99 Lift Station Upgrade	0	0	0	0	957,000	0	0	0	0	0	0	957,000
New Sewer Line - Cloverdale to Parkland	0	0	0	0	0	0	0	0	0	0	1,193,000	1,193,000
O&M Budgeted												
Improvement Projects	$25,000	$0	$0	$0	$0	$28,562	$0	$0	$0	$0	$32,632	$86,194
Capital Outlay - Equipment	0	0	0	0	0	0	0	0	0	0	0	0
Total Capital Projects	**$59,000**	**$77,000**	**$858,000**	**$3,055,700**	**$982,000**	**$953,562**	**$7,465,000**	**$25,000**	**$25,000**	**$1,025,000**	**$1,250,632**	**$15,775,894**
Future Unidentified Capital Projects	$216,000	$263,000	$0	$0	$0	$0	$0	$715,000	$900,000	$0	$0	$2,094,000
Transfer to Capital Reserve	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Total Capital Improvement Projects	**$275,000**	**$340,000**	**$858,000**	**$3,055,700**	**$982,000**	**$953,562**	**$7,465,000**	**$740,000**	**$925,000**	**$1,025,000**	**$1,250,632**	**$17,869,894**
Less: Outside Funding Sources												
Fund 413 - I & I Improvement Reserve	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$25,000	$275,000
Fund 415 - Sewer Improvement Reserve	0	0	423,000	930,700	357,000	213,562	0	0	100,000	100,000	275,632	2,399,894
Fund 410 - Public Works Equipment Reserve	0	0	0	0	0	0	0	0	0	0	0	0
Grant	0	0	0	1,600,000	0	0	0	0	0	0	0	1,600,000
Developer	0	0	0	0	0	0	0	0	0	0	0	0
Low Interest Loans	0	0	0	0	0	0	0	0	0	0	0	0
Revenue Bonds	0	0	0	0	0	0	6,725,000	0	0	0	0	6,725,000
Total Funding Sources	**$25,000**	**$25,000**	**$448,000**	**$2,555,700**	**$382,000**	**$238,562**	**$6,750,000**	**$25,000**	**$125,000**	**$125,000**	**$300,632**	**$10,999,894**
Rate Funded Capital	**$250,000**	**$315,000**	**$410,000**	**$500,000**	**$600,000**	**$715,000**	**$715,000**	**$715,000**	**$800,000**	**$900,000**	**$950,000**	$6,870,000

City of Kalama
Sewer Rate Study
Debt Schedule
Exhibit 5

	DOE - SRF / WWTP Construction Loan	*Total*
2020	$295,496	$295,496
2021	295,496	295,496
2022	295,496	295,496
2023	295,496	295,496
2024	295,496	295,496
2025	295,496	295,496
2026	295,496	295,496
2027	295,496	295,496
2028	0	0
2029	0	0
2030	0	0
	$2,363,966	**$2,363,966**

		Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total
Residential														
Fixed Charge	***$ / Acct***													
Bi - Monthly	$111.90	914	0	914	0	914	0	914	0	914	0	914	0	**914**
Monthly	55.95	0	0	0	0	0	0	0	0	0	0	0	0	**0**
Low Income														
Bi - Monthly	$85.90	31	0	31	0	31	0	31	0	31	0	31	0	**31**
Volume Charge	***$ / CCF***													
All	$8.70	4,757	0	4,817		5,269	9,198	0	0	0	5,061	0	4,168	33,270
Total Residential Revenues		**$146,325**	**$0**	**$146,847**	**$0**	**$150,781**	**$80,018**	**$104,940**	**$0**	**$104,940**	**$44,031**	**$104,940**	**$36,263**	**$919,084**
Multi-Family														
Fixed Charge	***$/Unit***													
Bi - Monthly	$97.40	62		62		62		62		62		62		**62**
Monthly	48.70	201	201	201	201	201	201	201	201	201	201	201	201	**201**
Volume Charge	***$ / CCF***													
All	$8.70	2,000	1,426	1,436	1,576	1,232	1,571	1,642	1,663	1,222	1,195	1,115	1,271	17,348
Total Multi-Family Revenues		**$33,225**	**$22,194**	**$28,320**	**$23,496**	**$26,550**	**$23,455**	**$30,113**	**$24,257**	**$26,456**	**$20,189**	**$25,528**	**$20,844**	**$304,627**
Com / Ind														
Fixed Charge	***$/Acct***													
3/4"	$66.00	65	65	65	65	65	65	65	65	65	65	65	65	**65**
3/4"(Out)	66.00	1	1	1	1	1	1	1	1	1	1	1	1	**1**
1"	82.00	19	19	19	19	19	19	19	19	19	19	19	19	**19**
1.5"	186.00	5	5	5	5	5	5	5	5	5	5	5	5	**5**
2"	270.00	7	7	7	7	7	7	7	7	7	7	7	7	**7**
3"	495.00	5	5	5	5	5	5	5	5	5	5	5	5	**5**
4"	750.00	0	0	0	0	0	0	0	0	0	0	0	0	**0**
6"	1,100.00	0	0	0	0	0	0	0	0	0	0	0	0	**0**
10"	2,220.00	0	0	0	0	0	0	0	0	0	0	0	0	**0**
		102	**102**	**102**	**102**	**102**	**102**	**102**	**102**	**102**	**102**	**102**	**102**	**102**
Volume Charge	***$ / CCF***													
All	$8.70	2,683	1,941	2,385	2,576	4,869	7,078	6,265	7,508	4,530	3,297	2,569	2,012	**47,714**
Total Com / Ind Revenues		**$34,550**	**$28,097**	**$31,961**	**$33,617**	**$53,566**	**$72,789**	**$65,718**	**$76,529**	**$50,620**	**$39,894**	**$33,559**	**$28,717**	**$549,617**

	Jan-19	Feb-19	Mar-19	Apr-19	May-19	Jun-19	Jul-19	Aug-19	Sep-19	Oct-19	Nov-19	Dec-19	Total
Summary													
Customers													
Residential	945	0	945	0	945	0	945	0	945	0	945	0	**473**
Multi-Family	263	201	263	201	263	201	263	201	263	201	263	201	**232**
Com / Ind	102	102	102	102	102	102	102	102	102	102	102	102	**102**
Total Customers	**1,310**	**303**	**1,310**	**303**	**1,310**	**303**	**1,310**	**303**	**1,310**	**303**	**1,310**	**303**	**807**
Volume													
Residential	4,757	0	4,817	0	5,269	9,198	0	0	0	5,061	0	4,168	**33,270**
Multi-Family	2,000	1,426	1,436	1,576	1,232	1,571	1,642	1,663	1,222	1,195	1,115	1,271	**17,348**
Com / Ind	2,683	1,941	2,385	2,576	4,869	7,078	6,265	7,508	4,530	3,297	2,569	2,012	**47,714**
Total Volume	**9,440**	**3,367**	**8,638**	**4,151**	**11,370**	**17,847**	**7,907**	**9,171**	**5,752**	**9,554**	**3,684**	**7,451**	**98,332**
Revenue													
Residential	$146,325	$0	$146,847	$0	$150,781	$80,018	$104,940	$0	$104,940	$44,031	$104,940	$36,263	**$919,084**
Multi-Family	33,225	22,194	28,320	23,496	26,550	23,455	30,113	24,257	26,456	20,189	25,528	20,844	**304,627**
Com / Ind	34,550	28,097	31,961	33,617	53,566	72,789	65,718	76,529	50,620	39,894	33,559	28,717	**549,617**
Total Revenue	**$214,100**	**$50,291**	**$207,128**	**$57,113**	**$230,896**	**$176,263**	**$200,771**	**$100,786**	**$182,016**	**$104,114**	**$164,026**	**$85,824**	**$1,773,328**

	2019 Actual	2020 Budget
	$1,623,553	**$1,600,000**
Difference	*$149,775*	*$173,328*
Percent	9.2%	10.8%

City of Kalama
Sewer Rate Study
Volume Distribution Factor
Exhibit 7

	Annual flow in CCF	20.0% Inflow and Infiltration	Total Annual Flow @ Plant CCF	Avg. Daily Flow @ Plant (MGD)	% of Total
Residential	33,270	6,654	39,924	0.082	33.8%
Multi-Family	17,348	3,470	20,818	0.043	17.6%
Com / Ind	47,714	9,543	57,256	0.117	48.5%
	98,332	**19,666**	**117,998**	**0.242**	**100.0%**
		Actual Average Daily Flow [1]		**0.256**	

Notes

[1] - Provided by the City; Jun 2019 - May 2020

Distribution Factor ***(VOL)***

City of Kalama
Sewer Rate Study
Development of the Customer Distribution Factor
Exhibit 8

	Actual Customer		*Customer Service & Accounting*			
	Number of Customers	**% of Total**	**Number of Units**	**Weighting Factor**	**Weighted Customer**	**% of Total**
Residential	473	78.2%	473	1.00	473	58.6%
Multi-Family	30	5.0%	232	1.00	232	28.8%
Com / Ind	102	16.9%	102	1.00	102	12.6%
	605	**100.0%**	**807**		**807**	**100.0%**
Distribution Factor		***(AC)***				***(WCA)***

City of Kalama
Sewer Rate Study
Strength Distribution Factor
Exhibit 9

		BOD			*TSS*		
	Annual Flow (MGD)	**Avg. Factor (mg/l)**	**Calculated Pounds**	**% of Total**	**Avg. Factor (mg/l)**	**Calculated Pounds**	**% of Total**
Residential	0.082	55	13,698	33.8%	60	14,943	33.8%
Multi-Family	0.043	55	7,143	17.6%	60	7,792	17.6%
Com / Ind	0.117	55	19,645	48.5%	60	21,431	48.5%
	0.242		**40,486**	**100.0%**		**44,167**	**100.0%**
	Actual Lbs. Removed [1]		*41,345*			*44,489*	

Notes

[1] - Based on City data for June 2019 - May 2020

Distribution Factor ***(BOD)*** ***(SS)***

City of Kalama
Sewer Rate Study
Revenue Related Distribution Factor
Exhibit 10

	Projected Year 2021	% of Total
Residential	$858,287	51.8%
Multi-Family	284,476	17.2%
Com / Ind	513,260	31.0%
	$1,656,024	**100.0%**

Distribution Factor ***(RR)***

City of Kalama
Sewer Rate Study
Functionalization and Allocation of Plant in Service
Exhibit 11.1

			Strength Related		*Customer Related*				
	Net Plant as of 6/22/2020	**Volume** *(VOL)*	**Bio-Oxygen Demand** *(BOD)*	**Suspended Solids** *(SS)*	**Actual Customer** *(AC)*	**Weighted Customer Acct/Svcs** *(WCA)*	**Revenue** *(RR)*	**Direct** *(DA)*	*Basis of Classification*
Collection									
	$7,943,775	$0	$0	$0	$5,163,453	$2,780,321	$0	$0	65.0% AC 35% WCA
Total Collection	**$7,943,775**	**$0**	**$0**	**$0**	**$5,163,453**	**$2,780,321**	**$0**	**$0**	
Lift Station	$569,240	$569,240	$0	$0	$0	$0	$0	$0	100.0% VOL
Total Lift Station	**$569,240**	**$569,240**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Treatment	$7,128,940	$3,564,470	$1,782,235	$1,782,235	$0	$0	$0	$0	50.0% VOL 25.0% BOD 25.0% SS
Total Treatment	**$7,128,940**	**$3,564,470**	**$1,782,235**	**$1,782,235**	**$0**	**$0**	**$0**	**$0**	
Land & Buildings	$0	$0	$0	$0	$0	$0	$0	$0	100.0% VOL
Total Land & Buildings	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Plant Before General Plant	***$15,641,955***	***$4,133,710***	***$1,782,235***	***$1,782,235***	***$5,163,453***	***$2,780,321***	***$0***	***$0***	
% Plant Before General Plant	*100.0%*	*26.4%*	*11.4%*	*11.4%*	*33.0%*	*17.8%*	*0.0%*	*0.0%*	*Factor PBGP*
General Plant									
	$0	$0	$0	$0	$0	$0	$0	$0	30.0% AC 70.0% PBGP
Total General Plant	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Net Sewer Plant	**$15,641,955**	**$4,133,710**	**$1,782,235**	**$1,782,235**	**$5,163,453**	**$2,780,321**	**$0**	**$0**	

City of Kalama
Sewer Rate Study
Functionalization and Allocation of the Revenue Requirement
Exhibit 12.1

	Expenses 2021	Volume (VOL)	Bio-Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)	Revenue (RR)	Direct (DA)	Basis of Classification
Expenses									
General Sewer Operations									
Salaries - Sewer/Admin. General	$61,800	$0	$0	$0	$0	$61,800	$0	$0	100.0% WCA
Benefits - Admin	25,875	0	0	0	0	25,875	0	0	100.0% WCA
Office & Oper. Supplies	2,060	0	0	0	0	2,060	0	0	100.0% WCA
Travel - Administrative	513	0	0	0	0	513	0	0	100.0% WCA
Equipment Maintenance - Office	11,330	0	0	0	0	11,330	0	0	100.0% WCA
Miscellaneous - Admin	5,125	0	0	0	0	5,125	0	0	100.0% WCA
Salaries - Sewer/Maintenance	133,900	35,386	15,256	15,256	44,201	23,800	0	0	As Net Plant In Service
Overtime Earnings	41,200	10,888	4,694	4,694	13,600	7,323	0	0	As Net Plant In Service
Benefits	87,975	23,249	10,024	10,024	29,041	15,637	0	0	As Net Plant In Service
Operating Supplies	14,420	3,811	1,643	1,643	4,760	2,563	0	0	As Net Plant In Service
Fuel Consumed	6,728	1,778	767	767	2,221	1,196	0	0	As Net Plant In Service
Inventory Purchase - Pipe/Fittings	2,060	544	235	235	680	366	0	0	As Net Plant In Service
Small Tools	1,545	408	176	176	510	275	0	0	As Net Plant In Service
Equipment Rental	520	137	59	59	172	92	0	0	As Net Plant In Service
Repairs & Maintenance - Contracted	15,450	4,083	1,760	1,760	5,100	2,746	0	0	As Net Plant In Service
Equipment Maintenance	20,800	5,497	2,370	2,370	6,866	3,697	0	0	As Net Plant In Service
Vehicle Maintenance	1,040	275	118	118	343	185	0	0	As Net Plant In Service
Salaries - Sewer/Operations	86,520	22,865	9,858	9,858	28,560	15,379	0	0	As Net Plant In Service
Overtime Earnings (2)	20,600	5,444	2,347	2,347	6,800	3,662	0	0	As Net Plant In Service
Benefits (2)	41,400	10,941	4,717	4,717	13,666	7,359	0	0	As Net Plant In Service
Uniforms	725	191	83	83	239	129	0	0	As Net Plant In Service
Operating Supplies - Chemicals	30,900	8,166	3,521	3,521	10,200	5,492	0	0	As Net Plant In Service
Other Professional Services	618	309	155	155	0	0	0	0	50.0% VOL 25.0% BOD 25.0% SS
Intergovernmental Fees/Services	5,150	1,361	587	587	1,700	915	0	0	As Net Plant In Service
Professional Services	6,180	1,633	704	704	2,040	1,098	0	0	As Net Plant In Service
Utilities	108,675	54,338	27,169	27,169	0	0	0	0	50.0% VOL 25.0% BOD 25.0% SS
Repairs & Maintenance	15,450	4,083	1,760	1,760	5,100	2,746	0	0	As Net Plant In Service
Contracted Repairs	2,060	544	235	235	680	366	0	0	As Net Plant In Service
Contract Services - Disposal	120,000	0	0	120,000	0	0	0	0	100.0% SS
ON Call Pay	7,725	2,041	880	880	2,550	1,373	0	0	As Net Plant In Service
Benefits (3)	3,623	957	413	413	1,196	644	0	0	As Net Plant In Service
Office Computer Supplies	3,090	817	352	352	1,020	549	0	0	As Net Plant In Service
Engineering	515	136	59	59	170	92	0	0	As Net Plant In Service
Communications	10,300	2,722	1,174	1,174	3,400	1,831	0	0	As Net Plant In Service
Travel & Training	1,025	271	117	117	338	182	0	0	As Net Plant In Service
Facilities Maintenance	1,030	272	117	117	340	183	0	0	As Net Plant In Service
Miscellaneous	1,025	271	117	117	338	182	0	0	As Net Plant In Service
Total General Sewer Operations	**$898,950**	**$203,419**	**$91,466**	**$211,466**	**$185,833**	**$206,766**	**$0**	**$0**	
Total Operations & Maintanence	**$898,950**	**$203,419**	**$91,466**	**$211,466**	**$185,833**	**$206,766**	**$0**	**$0**	

City of Kalama
Sewer Rate Study
Functionalization and Allocation
of the Revenue Requirement
Exhibit 12.1

	Expenses 2021	Volume (VOL)	Bio-Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)	Revenue (RR)	Direct (DA)	*Basis of Classification*
Taxes & Transfers									
Accounting Service Fees	$82,400	$0	$0	$0	$0	$82,400	$0	$0	100.0% WCA
Trsf. TO 410 Equip Rsve PW	12,480	2,824	1,270	2,936	2,580	2,871	0	0	As O&M
Transfer - Benefit Reserve 107	3,105	703	316	730	642	714	0	0	As O&M
Transfer TO Audit # 115	2,050	464	209	482	424	472	0	0	As O&M
Transfer Out TO 115-Insurance	47,150	10,669	4,797	11,091	9,747	10,845	0	0	As O&M
General Fund Sewer Utility Tax	101,280	22,918	10,305	23,825	20,937	23,295	0	0	As O&M
Sewer Utility Tax - GFCF	84,400	19,098	8,587	19,854	17,447	19,413	0	0	As O&M
Department of Revenue	39,357	0	0	0	0	0	39,357	0	100.0% RR
Total Taxes & Transfers	**$372,222**	**$56,676**	**$25,484**	**$58,919**	**$51,777**	**$140,009**	**$39,357**	**$0**	
Rate Funded Capital	**$315,000**	**$83,245**	**$35,891**	**$35,891**	**$103,982**	**$55,991**	**$0**	**$0**	As Net Plant In Service
Debt Service									
DOE - SRF / WWTP Construction Loan	$295,496	$78,091	$33,669	$33,669	$97,544	$52,524	$0	$0	As Net Plant In Service
New Revenue bonds	0	0	0	0	0	0	0	0	As O&M
New Low interest loans	0	0	0	0	0	0	0	0	As O&M
Total Debt Service	$295,496	$78,091	$33,669	$33,669	$97,544	$52,524	$0	$0	
Less Other Funding	$0	$0	$0	$0	$0	$0	$0	$0	As Debt
Net Debt Service	**$295,496**	**$78,091**	**$33,669**	**$33,669**	**$97,544**	**$52,524**	**$0**	**$0**	As Debt
Reserve Funding									
Fund 401 - W / S Operating Fund	$54,248	$12,276	$5,520	$12,761	$11,214	$12,478	$0	$0	As O&M
Fund 415 - Sewer Improvement Reserve	0	0	0	0	0	0	0	0	As O&M
Total Reserve Funding	**$54,248**	**$12,276**	**$5,520**	**$12,761**	**$11,214**	**$12,478**	**$0**	**$0**	
Total Revenue Requirement	**$1,935,916**	**$433,707**	**$192,029**	**$352,705**	**$450,350**	**$467,767**	**$39,357**	**$0**	
Less: Other Revenues									
Other Misc. Revenue	$505	$113	$50	$92	$117	$122	$10	$0	As Total Rev Req
Engineering Serv - Reimbursement	505	113	50	92	117	122	10	0	As Total Rev Req
Sewer Utility Tax	185,680	41,598	18,418	33,829	43,195	44,865	3,775	0	As Total Rev Req
Sewer - Other Sales Tax Collection	101	23	10	18	23	24	2	0	As Total Rev Req
Sale of Surplus - Scrap Metal	505	113	50	92	117	122	10	0	As Total Rev Req
Sewer - Labor	505	113	50	92	117	122	10	0	As Total Rev Req
Sewer - Parts	1,010	226	100	184	235	244	21	0	As Total Rev Req
Total Other Revenues	**$188,811**	**$42,300**	**$18,729**	**$34,400**	**$43,923**	**$45,622**	**$3,839**	**$0**	
Total Net Revenue Requirement	**$1,747,105**	**$391,407**	**$173,301**	**$318,306**	**$406,427**	**$422,146**	**$35,519**	**$0**	

City of Kalama
Sewer Rate Study
Distribution of Revenue Requirement
Exhibit 13

	Net Revenue Requirement	Residential	Multi-Family	Com / Ind	*Basis of Allocation*
Volume	$391,407	$132,430	$69,054	$189,923	*(VOL)*
Bio-Oxygen Demand	$173,301	$58,635	$30,575	$84,091	*(BOD)*
Suspended Solids	$318,306	$107,696	$56,157	$154,452	*(SS)*
Actual Customer	$406,427	$317,679	$20,170	$68,578	*(AC)*
Customer Acct/Svcs	$422,146	$247,320	$121,436	$53,390	*(WCA)*
Revenue	$35,519	$18,409	$6,102	$11,009	*(RR)*
Direct	$0	$0	$0	$0	*(DA)*
Net Revenue Requirement	**$1,747,105**	**$882,169**	**$303,494**	**$561,443**	

City of Kalama
Sewer Rate Study
Summary of Cost of Service Analysis
Exhibit 14

	2021 Expenses	Residential	Multi-Family	Com / Ind	*Notes*
Revenues at Present Rates	$1,656,024	$858,287	$284,476	$513,260	
Allocated Revenue Requirement	$1,747,105	$882,169	$303,494	$561,443	
Balance / (Deficiency)	($91,081)	($23,881)	($19,017)	($48,183)	
Required % Change in Rates	**5.5%**	**2.8%**	**6.7%**	**9.4%**	

City of Kalama
Sewer Rate Study
Average Unit Costs
Exhibit 15

	Total	Residential	Multi-Family	Com / Ind	*Notes*
Volume $/CCF	$3.98	$3.98	$3.98	$3.98	
Bio-Oxygen Demand $/CCF	$1.76	$1.76	$1.76	$1.76	
Suspended Solids $/CCF	$3.24	$3.24	$3.24	$3.24	
Revenue/Direct $/CCF	$0.36	$0.55	$0.35	$0.23	
Total $/CCF	$9.34	$9.53	$9.33	$9.21	
Customer $/Acct./Month	$114.22	$99.65	$393.35	$99.65	
Basic Data:					
Annual Sewer Flow(/CCF)	98,332	33,270	17,348	47,714	
Number of Accounts	605	473	30	102	

	Present Rates	Proposed				
		2021	2022	2023	2024	2025
Residential						
Fixed Charge	***$/Acct.***					
Monthly	$55.95	$59.03	$62.27	$65.70	$69.31	$73.12
Volume Charge	***$/CCF***					
Consumption	$8.70	$9.18	$9.68	$10.21	$10.77	$11.36
Multi-Family						
Fixed Charge	***$/Acct.***					
Monthly	$48.70	$51.38	$54.21	$57.19	$60.33	$63.65
Volume Charge	***$/CCF***					
Consumption	$8.70	$9.18	$9.68	$10.21	$10.77	$11.36
Com / Ind						
Fixed Charge	***$/Acct.***					
3/4"	$66.00	$69.63	$73.46	$77.50	$81.76	$86.26
3/4"(Out)	66.00	69.63	73.46	77.50	81.76	86.26
1"	82.00	86.51	91.27	96.29	101.59	107.18
1.5"	186.00	196.23	207.02	218.41	230.42	243.09
2"	270.00	284.85	300.52	317.05	334.49	352.89
3"	495.00	522.23	550.95	581.25	613.22	646.95
4"	750.00	791.25	834.77	880.68	929.12	980.22
10"	1,100.00	1,160.50	1,224.33	1,291.67	1,362.71	1,437.66
Volume Charge	**$/CCF**					
Consumption	$8.70	$9.18	$9.68	$10.21	$10.77	$11.36

Stormwater Technical Appendix

City of Kalama
Stormwater Rate Study
Summary of the Revenue Requirement
Exhibit 1

	Budget	*Projected*									
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**
Revenues											
Total Rate Revenues	$120,002	$122,402	$124,850	$127,348	$129,894	$132,492	$135,142	$137,845	$140,602	$143,414	$146,282
Total Miscellaneous Revenue	500	510	520	531	541	552	563	574	586	598	609
Total Revenues	**$120,502**	**$122,912**	**$125,371**	**$127,878**	**$130,436**	**$133,044**	**$135,705**	**$138,419**	**$141,188**	**$144,012**	**$146,892**
Expenses											
Total O&M	$60,000	$81,975	$84,665	$87,444	$90,315	$93,280	$96,343	$99,508	$102,776	$106,152	$109,640
Taxes & Transfers	1,800	1,836	1,873	1,910	1,948	1,987	2,027	2,068	2,109	2,151	2,194
Rate Funded Capital	0	10,000	100,000	0	70,000	75,000	80,000	95,000	100,000	105,000	110,000
Net Debt Service	70,027	70,027	70,027	0	0	0	0	0	0	0	0
Reserve Funding	(11,325)	(29,470)	(106,714)	77,786	24,182	37,734	40,080	32,850	36,070	39,762	43,953
Total Revenue Requirement	**$120,502**	**$134,369**	**$149,852**	**$167,140**	**$186,445**	**$208,002**	**$218,450**	**$229,426**	**$240,955**	**$253,065**	**$265,787**
Bal./(Def.) of Funds Before Add'l Tax	$0	($11,456)	($24,481)	($39,262)	($56,010)	($74,958)	($82,745)	($91,006)	($99,767)	($109,054)	($118,896)
Plus: Add'l Taxes with Rate Adj.	0	(172)	(367)	(589)	(840)	(1,124)	(1,241)	(1,365)	(1,497)	(1,636)	(1,783)
Bal./(Def.) of Funds With Added Tax	$0	($11,628)	($24,848)	($39,851)	($56,850)	($76,082)	($83,986)	($92,371)	($101,263)	($110,690)	($120,679)
Bal. as a % of Rate Adj. Req'd	0.0%	9.5%	19.9%	31.3%	43.8%	57.4%	62.1%	67.0%	72.0%	77.2%	82.5%
Proposed Rate Adjustment	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**
Add'l Revenue with Proposed Rate Adj.	$0	$11,628	$24,848	$39,851	$56,850	$76,082	$83,986	$92,371	$101,263	$110,690	$120,679
Bal./(Def.) After Proposed Rate Adj.	$0	$0	$0	($0)	$0	$0	$0	$0	$0	$0	$0
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Average Residential Customer Bill	$5.60 *(1 ESU)*										
Customer Bill on Proposed Adj.	$5.60	$6.13	$6.71	$7.35	$8.05	$8.82	$9.08	$9.35	$9.63	$9.92	$10.22
Bill Difference - Monthly		0.53	0.58	0.64	0.70	0.76	0.26	0.27	0.28	0.29	0.30
Cumulative Bill Difference		0.53	1.11	1.75	2.45	3.22	3.48	3.75	4.03	4.32	4.62
Debt Service Coverage Ratio (all debt, including taxes)											
Before Rate Adjustment		0.56	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
After Proposed Rate Adjustment		0.72	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ending Reserve Fund Balance	**($19,325)**	**($63,747)**	**($165,295)**	**($82,226)**	**($52,627)**	**($9,340)**	**$36,552**	**$75,522**	**$118,037**	**$164,593**	**$215,714**

City of Kalama
Stormwater Rate Study
Escalation Factors
Exhibit 2

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Revenues												
Customer Growth	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Flat	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	
Expenses												
Salaries	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
Materials & Supplies	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	3.0%	
Equipment	Budget	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	4.0%	
Miscellaneous	Budget	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Utilities	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	3.5%	
General Expense	Budget	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	3.3%	
Flat	Budget	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
Interest	0.7%	0.7%	0.8%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
New Debt Service												
Low Interest Loans												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	2.5%	
Revenue Bond												
Term in Years	20	20	20	20	20	20	20	20	20	20	20	
Rate	4.5%	4.6%	4.7%	4.8%	4.9%	5.0%	5.0%	5.0%	5.0%	5.0%	5.0%	

City of Kalama
Stormwater Rate Study
Revenue Requirement
Exhibit 3

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Revenue												
Rate Revenues												
Single Family	$73,248	$74,713	$76,207	$77,731	$79,286	$80,872	$82,489	$84,139	$85,822	$87,538	$89,289	As Customer Growth
Multi Family	31,315	31,942	32,580	33,232	33,897	34,575	35,266	35,971	36,691	37,425	38,173	As Customer Growth
Commercial	15,439	15,748	16,063	16,384	16,712	17,046	17,387	17,735	18,089	18,451	18,820	As Customer Growth
Total Rate Revenues	**$120,002**	**$122,402**	**$124,850**	**$127,348**	**$129,894**	**$132,492**	**$135,142**	**$137,845**	**$140,602**	**$143,414**	**$146,282**	
Other Revenues												
Special Assessments	$500	$510	$520	$531	$541	$552	$563	$574	$586	$598	$609	As Customer Growth
Total Miscellaneous Revenue	**$500**	**$510**	**$520**	**$531**	**$541**	**$552**	**$563**	**$574**	**$586**	**$598**	**$609**	
Total Revenue	**$120,502**	**$122,912**	**$125,371**	**$127,878**	**$130,436**	**$133,044**	**$135,705**	**$138,419**	**$141,188**	**$144,012**	**$146,892**	
Expenses												
Storm Drainage - Salaries	$15,000	$15,450	$15,914	$16,391	$16,883	$17,389	$17,911	$18,448	$19,002	$19,572	$20,159	As Salaries
Overtime Earnings	10,000	10,300	10,609	10,927	11,255	11,593	11,941	12,299	12,668	13,048	13,439	As Salaries
Storm Drainage - Benefits	8,000	8,280	8,570	8,870	9,180	9,501	9,834	10,178	10,534	10,903	11,285	As Benefits
Supplies	2,000	2,070	2,142	2,217	2,295	2,375	2,459	2,545	2,634	2,726	2,821	As Benefits
Fuel Costs	0	0	0	0	0	0	0	0	0	0	0	As Benefits
Professional Services - Contracted	25,000	25,875	26,781	27,718	28,688	29,692	30,731	31,807	32,920	34,072	35,265	As Benefits
Compliance	0	20,000	20,650	21,321	22,014	22,730	23,468	24,231	25,018	25,832	26,671	As General Expense
Total Expenses	**$60,000**	**$81,975**	**$84,665**	**$87,444**	**$90,315**	**$93,280**	**$96,343**	**$99,508**	**$102,776**	**$106,152**	**$109,640**	
Total Operations & Maintenance	**$60,000**	**$81,975**	**$84,665**	**$87,444**	**$90,315**	**$93,280**	**$96,343**	**$99,508**	**$102,776**	**$106,152**	**$109,640**	
Taxes & Transfers												
State Utility Tax	$1,800	$1,836	$1,873	$1,910	$1,948	$1,987	$2,027	$2,068	$2,109	$2,151	$2,194	Calculated at 1.5% of rate rev
Total Taxes & Transfers	**$1,800**	**$1,836**	**$1,873**	**$1,910**	**$1,948**	**$1,987**	**$2,027**	**$2,068**	**$2,109**	**$2,151**	**$2,194**	
Rate Funded Capital	**$0**	**$10,000**	**$100,000**	**$0**	**$70,000**	**$75,000**	**$80,000**	**$95,000**	**$100,000**	**$105,000**	**$110,000**	

City of Kalama
Stormwater Rate Study
Revenue Requirement
Exhibit 3

	Budget	*Projected*										
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Debt Service												
Interfund Loan	$70,027	$70,027	$70,027	$0	$0	$0	$0	$0	$0	$0	$0	Debt Schedule
New Low Interest Loans	0	0	0	0	0	0	0	0	0	0	0	Calculated
New Revenue Bonds	0	0	0	0	0	0	0	0	0	0	0	Calculated
Total Debt Service	$70,027	$70,027	$70,027	$0	$0	$0	$0	$0	$0	$0	$0	
Facility Fee Revenue	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Net Debt Service	**$70,027**	**$70,027**	**$70,027**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Reserve Funding												
Fund 403 - Operating Reserve	($11,325)	($29,470)	($106,714)	$77,786	$24,182	$37,734	$40,080	$32,850	$36,070	$39,762	$43,953	
Capital Reserve	0	0	0	0	0	0	0	0	0	0	0	
Total Reserve Funding	**($11,325)**	**($29,470)**	**($106,714)**	**$77,786**	**$24,182**	**$37,734**	**$40,080**	**$32,850**	**$36,070**	**$39,762**	**$43,953**	
Total Revenue Requirement	**$120,502**	**$134,369**	**$149,852**	**$167,140**	**$186,445**	**$208,002**	**$218,450**	**$229,426**	**$240,955**	**$253,065**	**$265,787**	
Bal./(Def.) of Funds Before Add'l Tax	$0	($11,456)	($24,481)	($39,262)	($56,010)	($74,958)	($82,745)	($91,006)	($99,767)	($109,054)	($118,896)	
Plus: Add'l Taxes with Rate Adj.	0	(172)	(367)	(589)	(840)	(1,124)	(1,241)	(1,365)	(1,497)	(1,636)	(1,783)	
Bal./(Def.) of Funds With Added Tax	$0	($11,628)	($24,848)	($39,851)	($56,850)	($76,082)	($83,986)	($92,371)	($101,263)	($110,690)	($120,679)	
Bal. as a % of Rate Adj. Req'd	0.0%	9.5%	19.9%	31.3%	43.8%	57.4%	62.1%	67.0%	72.0%	77.2%	82.5%	
Proposed Rate Adjustment	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**9.5%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	**3.0%**	
Months of Adjustment	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	*12*	
Add'l Revenue with Proposed Rate Adj.	$0	$11,628	$24,848	$39,851	$56,850	$76,082	$83,986	$92,371	$101,263	$110,690	$120,679	
Bal./(Def.) After Proposed Rate Adj.	$0	$0	$0	($0)	$0	$0	$0	$0	$0	$0	$0	
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

	Budget	*Projected*									
	2020	**2021**	**2022**	**2023**	**2024**	**2025**	**2026**	**2027**	**2028**	**2029**	**2030**	***Notes***
Average Residential Customer Bill	**$5.60**	*(1 ESU)*										
Customer Bill on Proposed Adj.	$5.60	$6.13	$6.71	$7.35	$8.05	$8.82	$9.08	$9.35	$9.63	$9.92	$10.22	
Bill Difference - Monthly		0.53	0.58	0.64	0.70	0.76	0.26	0.27	0.28	0.29	0.30	
Cumulative Bill Difference		0.53	1.11	1.75	2.45	3.22	3.48	3.75	4.03	4.32	4.62	
Debt Service Coverage Ratio (all debt, including taxes)												
Before Rate Adjustment		0.56	0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
After Proposed Rate Adjustment		0.72	0.91	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Reserve Funds												
Beginning Fund Balance	**$62,000**	**($19,325)**	**($63,747)**	**($165,295)**	**($82,226)**	**($52,627)**	**($9,340)**	**$36,552**	**$75,522**	**$118,037**	**$164,593**	
Fund 403 - Operating Reserve												
Beginning Balance	**$62,000**	**($19,325)**	**($48,795)**	**($155,508)**	**($77,723)**	**($53,541)**	**($15,806)**	**$24,395**	**$57,531**	**$94,069**	**$134,500**	
Plus: To Reserve Fund	0	0	0	77,786	24,182	37,734	40,080	32,850	36,070	39,762	43,953	
Plus: Interfund Loan Proceeds	0	0	0	0	0	0	0	0	0	0	0	
Interest	0	0	0	0	0	0	121	286	468	669	892	
Less: Uses of Funds	(81,325)	(29,470)	(106,714)	0	0	0	0	0	0	0	0	
Ending Balance	**($19,325)**	**($48,795)**	**($155,508)**	**($77,723)**	**($53,541)**	**($15,806)**	**$24,395**	**$57,531**	**$94,069**	**$134,500**	**$179,345**	
Target: 90 days of O&M Expenses	*$14,795*	*$20,213*	*$20,876*	*$21,562*	*$22,269*	*$23,001*	*$23,756*	*$24,536*	*$25,342*	*$26,175*	*$27,035*	
Capital Reserve												
Beginning Balance	**$0**	**$0**	**($14,952)**	**($9,787)**	**($4,503)**	**$914**	**$6,466**	**$12,158**	**$17,990**	**$23,968**	**$30,093**	
Plus: To Reserve Fund	0	0	0	0	0	0	0	0	0	0	0	
Plus: Connection Fees	5,000	5,100	5,202	5,306	5,412	5,520	5,631	5,743	5,858	5,975	6,095	As Customer Growth
Interest	0	(52)	(37)	(22)	5	32	60	90	119	150	181	
Less: Uses of Funds	(5,000)	(20,000)	0	0	0	0	0	0	0	0	0	
Ending Balance	**$0**	**($14,952)**	**($9,787)**	**($4,503)**	**$914**	**$6,466**	**$12,158**	**$17,990**	**$23,968**	**$30,093**	**$36,369**	
Ending Fund Balance	**($19,325)**	**($63,747)**	**($165,295)**	**($82,226)**	**($52,627)**	**($9,340)**	**$36,552**	**$75,522**	**$118,037**	**$164,593**	**$215,714**	

City of Kalama
Stormwater Rate Study
Capital Improvement Program
Exhibit 4

	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
Capital Improvement Projects											
Council Crest to Juniper - Storm Improv.	$75,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Unfunded											
Cedar St Evaluations - Camera / Jet	0	30,000	100,000	0	0	0	0	0	0	0	0
Comprehensive Drainage Plan	0	0	0	0	70,000	0	0	0	0	0	0
Total Capital Improvement Projects	**$75,000**	**$30,000**	**$100,000**	**$0**	**$70,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Future Unidentified Capital Projects	**$0**	**$0**	**$0**	**$0**	**$0**	**$75,000**	**$80,000**	**$95,000**	**$100,000**	**$105,000**	**$110,000**
Transfer to Capital Reserves	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Total Capital Improvement Projects	**$75,000**	**$30,000**	**$100,000**	**$0**	**$70,000**	**$75,000**	**$80,000**	**$95,000**	**$100,000**	**$105,000**	**$110,000**
Other Funding Sources											
Fund 403 - Operating Reserve	$70,000	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
Capital Reserve	5,000	20,000	0	0	0	0	0	0	0	0	0
New Low Interest Loans	0	0	0	0	0	0	0	0	0	0	0
New Revenue Bonds	0	0	0	0	0	0	0	0	0	0	0
Total Other Funding Sources	**$75,000**	**$20,000**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Rate Funded Capital	**$0**	**$10,000**	**$100,000**	**$0**	**$70,000**	**$75,000**	**$80,000**	**$95,000**	**$100,000**	**$105,000**	**$110,000**

City of Kalama
Stormwater Rate Study
Revenue at Present Rates
Exhibit 5

		January	February	March	April	May	June	July	August	September	October	November	December	Total
Residential														
	$ / ERU													
Single Family	$5.60	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	**1,090**
	Revenues	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	**$73,248**
	$ / ERU													
Multi Family	$5.60	466	466	466	466	466	466	466	466	466	466	466	466	**466**
	Revenues	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	$2,610	**$31,315**
Total Residential Revenue		**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	**$8,714**	$104,563
Non-Residential														
	$ / ERU													
Commercial	$5.60	230	230	230	230	230	230	230	230	230	230	230	230	**230**
	Revenues	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	**$15,439**
Total Commercial Revenue		**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	**$1,287**	$15,439
Summary														
Customers														
Residential														
Single Family	*# of ESUs*	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	1,090	**1,090**
Multi Family	*# of ESUs*	466	466	466	466	466	466	466	466	466	466	466	466	**466**
Non-Residential														
Commercial	*# of ESUs*	230	230	230	230	230	230	230	230	230	230	230	230	**230**
		1,786	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	**1,786**	1,786
Revenues														
Residential														
Single Family		$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	$6,104	**$73,248**
Multi Family		2,610	2,610	2,610	2,610	2,610	2,610	2,610	2,610	2,610	2,610	2,610	2,610	**31,315**
Non-Residential														
Commercial		$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	$1,287	**$15,439**
		$10,000	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	**$10,000**	$120,002

CY 2019 Actual	**$100,626**
Difference	*$19,376*
Percent	*19.3%*
2020 Budget	**$120,000**
Difference	*$2*
Percent	*0.0%*

	Present Rates	*Proposed*				
		2021	**2022**	**2023**	**2024**	**2025**
All Customers - $ / ESU	$5.60	$6.13	$6.71	$7.35	$8.05	$8.81