FINAL REPORT

City of Kalama

Water & Sewer Rate Study

October 2015

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

October 19, 2015

Subject: Water & Sewer Utility Rate Study – Draft Final Report

Dear Ms. McMaster:

HDR is pleased to present our draft final report on the water and sewer utility rate study conducted for the City of Kalama (City). The objectives of the utility rate study were to provide an independent review of the City's five-year financial plan, develop rate structure alternatives for the City's consideration, and develop a five-year rate schedule that is projected to result in adequate revenue to fund the operating and capital needs of the water and sewer utilities. This report outlines the approach, methodology, findings, and conclusions of the comprehensive rate study process.

Our report was developed using the City's accounting, operating, and historical customer billing records. HDR relied upon this information to develop our analyses that form our findings, conclusions, and recommendations. At the same time, this study was developed using generally accepted water and sewer rate setting principles and methodologies. The conclusions and recommendations contained within this report are intended to provide the City with cost-based and equitable water and sewer utility rates.

We appreciate the assistance provided by the City staff, management, and Council with developing this study and its recommendations, and look forward to future opportunities to provide the City with professional utility rate, finance and engineering services.

Sincerely yours,
HDR Engineering, Inc.

Joe Healy
Senior Financial Analyst

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Executive Summary

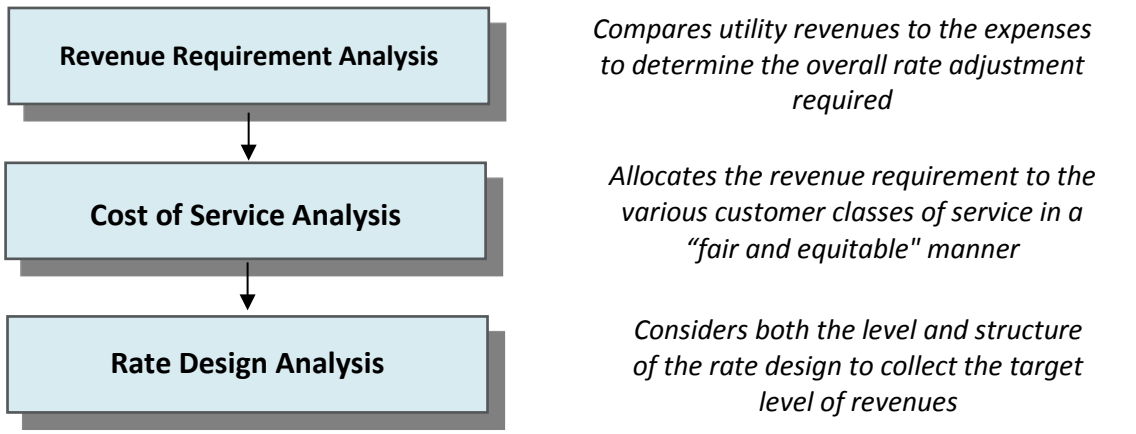
ES-1 Introduction

HDR was retained by the City of Kalama (City) to perform a water and sewer cost of service study. This study examines the adequacy of the current water and sewer rates, provides the cost basis for adjustments to rates, and seeks to adequately and equitably fund the operating and capital needs of the City's utilities. This report describes the methodology, findings, and conclusions of the water and sewer rate study process.

ES-2 Overview of the Rate Study Process

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

Figure ES – 1
Overview of the Comprehensive Rate Analyses



For the City's water and sewer rate study, HDR conducted all three analyses based on the current rate structure, operating expenses, and planned capital project expenses of each utility.

ES-3 Key Rate Study Results

Each utility was financially evaluated on a stand alone basis. By reviewing the water and sewer utilities on a stand alone basis, the need to adequately fund both operation and maintenance (O&M) expenses and capital infrastructure expenses must be balanced against the rate impacts to customers.

Based on the technical analysis undertaken as part of this study, the following findings, conclusions, and recommendations were noted.

- Revenue requirement analyses were developed for the water and sewer utilities for 2015 – 2020.
- The starting point for the revenue requirement analyses was the 2015 water & sewer utility budgets and current capital improvement plans.
- A five-year (2016 – 2020) rate transition plan was developed to adequately fund the operating and capital needs of each utility.
- A cost of service analysis was developed for each utility to determine the equitable and cost-based level of revenue to collect from each customer class of service (i.e., residential, multi-family, commercial).
- Cost-of-service differences were found among the customer classes in each utility, but no cost-of-service adjustments are recommended at this time.
- A rate transition plan was developed for both the water and sewer utilities.
  - ✓ Water rate transition plan – 4.0% for 2016 and 2.0% annual adjustments from 2017 through 2020.
  - ✓ Sewer rate transition plan – 9.5% annually from 2016 - 2018, 8.5% for 2019, and then 2.0% in 2020.
- Rates were developed for a 5-year period to provide the City with rate structures that are projected to meet future operating and capital needs, while meeting reserve fund goals.
- Based on the technical analysis, it is HDR's opinion that the proposed rate adjustments are necessary to adequately fund the financial needs of each utility and maintain prudent financial measures. These prudent financial measures include but are not limited to:
  - ✓ Adequate funding of capital improvement projects (CIP) funded from rates to maintain renewal and replacement programs of existing infrastructure.
  - ✓ Building and maintaining adequate minimum reserve levels for operating and capital expenses including emergencies and unanticipated operating and capital costs.
  - ✓ Developing a stable financial forecast to minimize future rate impacts and provide a foundation for future system improvements.
- By 2020, the City should review its financial plans and rates to determine the need for any future rate adjustments and/or a rate structure review.

ES-4 Water Rate Study

The water rate study determined the overall adequacy of the existing water rates, at current (existing) revenue levels. The water utility was evaluated on a stand alone basis. That is, no funding sources other than those generated by the water utility, such as water sales and other water-related fees and revenues, were used to fund water utility expenses.

Water Revenue Requirement Analysis

The starting point of the revenue requirement analysis was the 2015 water budget. HDR developed a projection of revenues and expenses for future years based on assumed escalation

(inflationary) factors. The study was developed for a five-year period to review future rate needs based on operating and capital needs.

The revenue requirement analysis examines the utility's operating and capital expenses, compares them to total water revenues, and determines the overall rate revenue adjustment required. Provided in Table ES-1 is a summary of the water revenue requirement analysis.

Table ES – 1
Summary of the Water Revenue Requirements ($000s)

	Budgeted	Projected				
	2015	2016	2017	2018	2019	2020
Revenues						
Rate Revenues	$1,320	$1,333	$1,350	$1,370	$1,390	$1,411
Other Revenues	6	6	6	7	8	10
Total Revenues	**$1,326**	**$1,339**	**$1,356**	**$1,376**	**$1,398**	**$1,421**
Expenses						
O&M Expenses	$726	$747	$768	$790	$813	$837
Rate Funded Capital	0	165	180	200	225	255
Taxes & Transfers	203	237	243	250	256	263
Net Debt Service	225	225	225	225	225	225
Change in Working Capital[1]	172	19	22	24	23	19
Total Expenses	**$1,326**	**$1,393**	**$1,438**	**$1,489**	**$1,542**	**$1,598**
Bal./(Def.) of Funds	$0	($53)	($82)	($112)	($144)	($177)
Bal. as % of Rev from Rates	0.0%	4.0%	6.1%	8.2%	10.4%	12.6%
Proposed Rate Adjustments	**0.0%**	**4.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Add'l Revenue with Rate Adj.	$0	$53	$82	$112	$144	$177
Bal./Def. After Rate Adj.	$0	$0	$0	$0	$0	$0
Avg. Residential Bill	$30.40	$31.62	$32.25	$32.89	$33.55	$34.22
Debt Service Coverage						
Before Rate Adjustment	2.34	2.31	2.28	2.27	2.25	2.24
After Rate Adjustment	2.34	2.54	2.65	2.77	2.89	3.03

Based upon the water utility revenue requirement analysis summarized in Table ES-1, HDR recommends the City annually increase the overall revenue levels by 4.0% in 2016 and 2.0% annually from 2017 through 2020. The projected revenue deficiency in 2016, before any rate adjustments, is approximately $53,000 which increases, absent any rate adjustments, to $177,000 by 2020. The proposed annual rate adjustments are primarily the result of the need to fund the annual debt service for the Todd Road water main project and the assumed inflation of O&M expenses over time. In addition, the proposed water rate adjustments will maintain debt service coverage ratios and reserve funds at a level to allow the City the flexibility to issue additional long-term debt, if necessary, to fund future capital improvements. A more detailed summary of the revenue requirement analysis is provided in Section 1.1 of this report.

Water Cost of Service Analysis

The second analytical step of the comprehensive water rate study is the cost of service analysis. A cost of service analysis determines the equitable allocation of the revenue requirement to the various customer classes of service. The City's customer classes of service reviewed were residential, multi-family, and commercial/industrial (inside and outside city limits). The objective of the cost of service analysis is different from determining the revenue requirement. A revenue requirement analysis determines the utility's overall financial needs, while the cost of service analysis determines the fair and equitable manner to collect the required level of revenue. A summary of the cost of service results is provided in Table ES-2.

Table ES – 2
Summary of the Water Cost of Service Analysis ($000s)

Class of Service	Present Rate Revenue	Allocated Costs	Plus: Return Component	Total Allocated Costs	$ Difference	% Difference
Residential - Inside	$194	$309	($106)	$203	($9)	4.5%
Residential - Outside	382	308	85	393	(11)	2.7%
Multi-Family - Inside	52	75	(28)	47	5	-9.4%
Multi-Family - Outside	11	9	3	12	(1)	5.9%
Com/Ind - Inside	97	127	(49)	78	19	-19.3%
Com/Ind - Outside	425	375	120	494	(69)	16.2%
10" Com/Ind - Outside	171	124	34	159	12	-7.1%
Total	**$1,333**	**$1,327**	**$59**	**$1,386**	**($53)**	**4.0%**

When looking at the water system and allocating its costs, it is important to keep in mind the different customer classes' consumption characteristics and facility requirements. The results of the water cost of service show that cost differences exist between serving the various customer classes of service. A simple way to assess the equity between customer classes of service is if a customer group is within +/- 5% of the overall system revenue adjustment. If so, then the customer class is reasonably presumed to be paying an equitable share of costs. In the City's case, the results show minor cost differences between the customer classes of service.

It is important to note that the City has an outside differential in place and cost of service results may be affected by it. Additional consideration should be given to the fact that this is the first cost of service study undertaken by the City. Cost of service results can vary from year to year so it is not recommended to make large adjustments based on a single study. Rather the City should conduct another cost of service review in about five years. If the results validate the cost of service difference, then the rates should be adjusted accordingly. At that time, the City could begin to adjust rates to reflect the cost of service results. Section 1.2 of this report provides a more detailed discussion of the water cost of service analysis conducted for the City's system.

Water Rate Design Analysis

The final component of the comprehensive rate study is developing a proposed rate structure. The proposed rates should be reflective of the overall revenue needs, as developed in the revenue requirement analysis, along with the results of the cost of service analysis. As part of the water rate design, two rate alternatives were developed. The first alternative maintains the current rate structure and adjusts rates "across the board" meaning all components are adjusted by the proposed percentage. The second alternative also maintains the current rate structure but a greater proportion of the rate adjustment is applied to the fixed charge. The City currently receives approximately 27% of its rate revenue from the fixed charge. This leaves the utility vulnerable to large revenue swings in the event that consumption characteristics shift. The proposed rate designs are discussed in more detail in the following sections of the report.

For residential customers, HDR proposes that the water rate structure remains the same. The current rate structure is effective and contemporary with a fixed charge per account and a volumetric component charge on a per hundred cubic foot (CCF) basis.

For outside city customers, there is a differential in place which is to help the City recoup costs for expanding the water system outside of its jurisdiction. This figure is applied to all components of the rate structure. Table ES-3 summarizes the present and proposed residential rates for 2016 through 2020 for the first alternative.

Table ES – 3
Present and Proposed Residential Water Rates (Inside City) – Alternative 1

	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
¾" or 1"	$9.50	$9.88	$10.08	$10.28	$10.49	$10.70
Volume Charge ($/CCF)						
All Consumption	$1.90	$1.98	$2.02	$2.06	$2.10	$2.14

At present rates, a typical residential customer with a ¾" meter and 6 CCF of monthly consumption will pay $20.90 per month. Under the proposed rates, the same customer would pay $21.76 in 2016 and $22.20 in 2017. This results in a $0.86 and $1.30 per month increase, respectively.

Table ES-4 shows the present and proposed rates under Alternative 2. This alternative aims to increase fixed charge sourced revenues by maintaining the current consumption charge and instead applying the entire rate adjustment to the fixed charge component.

Table ES – 4 Present and Proposed Residential Water Rates (Inside City) – Alternative 2						
	Present Rate	**Proposed**				
		2016	**2017**	**2018**	**2019**	**2020**
Fixed Charge ($/Acct./Mo)						
¾" or 1"	$9.50	$10.36	$10.83	$11.32	$11.78	$12.26
Volume Charge ($/CCF)						
All Consumption	$1.90	$1.90	$1.90	$1.90	$1.90	$1.90

The rest of the rate design alternatives for the other customer classes along with the proposed rate designs are discussed in detail in Section 1.3 of this report.

ES-5 Sewer Rate Study

Similar to the water rate study, the sewer rate study determined the overall adequacy of the existing sewer rates. No funding sources other than those generated by the sewer utility were used to fund sewer utility operating or capital expenses.

Sewer Revenue Requirement Analysis

As with the water analysis, the starting point of the sewer revenue requirement analysis was the 2015 sewer budgets. HDR developed a projection of revenues and expenses for future years based on assumed escalation (inflationary) factors. The analysis was developed for a projected five-year period to review future rate needs based on operating and capital needs.

The revenue requirement analysis sums the sewer utility's operating and capital expenses and compares it to the total sewer revenues to determine the overall rate adjustment required. A rate transition plan was then developed to meet the various financial needs of the utility. Table ES-5 provides a summary of the sewer revenue requirement and illustrates the need for rate adjustments in order to properly fund the sewer utility.

Table ES – 5
Summary of the Sewer Revenue Requirements ($000s)

	Budgeted	Projected				
	2015	2016	2017	2018	2019	2020
Revenues						
Rate Revenues	$960	$969	$979	$989	$999	$1,009
Other Revenues	3	3	3	4	4	4
Total Revenues	**$963**	**$973**	**$982**	**$992**	**$1,003**	**$1,013**
Expenses						
O&M Expenses	$561	$577	$593	$611	$629	$648
Taxes & Transfers	127	131	132	137	138	143
Rate Funded Capital	$0	0	60	70	80	100
Net Debt Service	295	350	350	485	580	529
Change in Working Capital[1]	(19)	7	42	(1)	(0)	50
Total Expenses	**$963**	**$1,065**	**$1,177**	**$1,302**	**$1,427**	**$1,470**
Bal./(Def.) of Funds	$0	($92)	($195)	($309)	($424)	($457)
Bal. as % of Rev from Rates	0.0%	9.5%	19.9%	31.3%	42.5%	45.3%
Proposed Rate Adjustments	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**8.5%**	**2.0%**
Add'l Revenue with Rate Adj.	$0	$92	$195	$309	$424	$457
Bal./Def. After Rate Adj.	$0	$0	$0	$0	$0	($0)
Average Residential Sewer Bill	$74.50	$81.58	$89.33	$97.81	$106.13	$108.25
Debt Service Coverage						
Before Rate Adjustment	1.31	1.08	1.06	0.75	0.61	0.66
After Rate Adjustment	1.31	1.61	2.18	2.03	2.08	2.38

The results of the sewer revenue requirement indicated the need for 9.5% annual adjustments from 2016 through 2018 followed by adjustments of 8.5% in 2019 and 2.0% in 2020. The annual dollar deficit ranges from $92,000 in 2016 to $457,000 by 2020 cumulatively, assuming no adjustment to rates. The projected revenue deficiency is driven mainly by the need to adequately fund capital improvements and the assumed inflation associated with the projected O&M expenses. The proposed rate adjustments are designed to provide sufficient revenue to fund the annual O&M and capital needs of the sewer utility, as well as maintain strong financial metrics for debt service coverage ratios and reserve balances. Upholding these financial goals and objectives will provide the utility flexibility for planned and unplanned capital and operating expenditures. A detailed discussion of the sewer revenue requirement is provided in Section 2.1 of this report.

Sewer Cost of Service Analysis

Similar to the water cost of service analysis, the customer classes of service reviewed are residential, multi-family, and commercial. The City does not provide sewer services outside of

the City limits so there are not inside- and outside-city rates as in water. Provided below in Table ES-6 is a summary of the sewer cost of service analysis.

Table ES – 6
Summary of the Sewer Cost of Service Analysis ($000s)

Class of Service	Present Rate Revenues	Allocated Costs	$ Difference	% Difference
Residential	$580	$603	($23)	4.0%
Multi-Family	190	214	(23)	12.4%
Commercial	199	245	(46)	22.9%
Total	**$969**	**$1,061**	**($92)**	**9.5%**

The allocation of sewer costs reflects the facilities and costs allocated to each customer class and their respective benefit. The cost-of-service results indicate that there are slight cost differences between the customer classes of service. It is important to note again that there has not previously been a cost of service study completed. Cost of service study results can vary from year to year depending on numerous variables such as climate, economy, and customer consumption characteristics. For these reasons, it is not recommended to make large cost adjustments between classes, especially with only one study as the basis. Given that results have such volatility from year to year and that there have been no previous studies, HDR does not recommend any cost of service adjustments at this time. A more detailed discussion of the cost of service analysis is provided in Section 2.2 of this report.

Sewer Rate Design Analysis

The proposed rate designs for the sewer utility maintain the current sewer rate structures; only the level of the sewer rates is proposed for adjustment based on the recommendations of the study. The first rate design alternative, as in water, applies the proposed rate adjustment percentage equally to all rate components. Table ES-7 summarizes the present and proposed sewer rates for Alternative 1.

Table ES – 7
Present and Proposed Sewer Rates Alternative 1 – All Customers

	Present Rate	Proposed				
		2015	2016	2017	2018	2019
Fixed Charge	**$/Month**					
Residential	$38.50	$42.16	$46.17	$50.55	$54.85	$55.94
Multi-Family	33.50	36.68	40.16	43.98	47.72	48.67
Commercial						
3/4"	$44.50	$48.73	$53.36	$58.43	$63.40	$64.67
3/4"(Out)	44.50	48.73	53.36	58.43	63.40	64.67
1"	56.00	61.32	67.15	73.53	79.78	81.38
1.5"	127.50	139.61	152.87	167.39	181.62	185.25
2"	183.50	200.93	220.02	240.92	261.40	266.63
3"	340.00	372.30	407.67	446.40	484.34	494.03
4”	510.00	558.45	611.50	669.59	726.51	741.04
10”	1,525.00	1,669.88	1,828.52	2,002.23	2,172.42	2,215.87
Variable Charge	**$/CCF**					
All Consumption [1]	$6.00	$6.57	$7.19	$7.87	$8.54	$8.71

[1] – Residential is billed on winter water average, commercial is billed on all consumption

The second alternative, shown below in Table ES-8, is similar to that of water. The main goal in the rate design was to increase the rate revenue from the fixed charge. Currently, the City’s sewer utility collects approximately 52% of the revenue from the fixed charge. Although this figure is higher than the water utility, it still leaves the sewer utility vulnerable to fluctuations in revenues generated by the variable consumption charge. In addition, when looking at the costs that the sewer utility incurs to operate, a large percentage of them are fixed in nature, meaning they are not dependent on sewage flows.

Table ES – 8
Present and Proposed Sewer Rates Alternative 2 – All Customers

	Present Rate	Proposed				
		2015	2016	2017	2018	2019
Fixed Charge	**$/Month**					
Residential	$38.50	$44.66	$51.36	$58.71	$65.93	$67.77
Multi-Family	33.50	39.20	45.43	52.24	58.93	60.64
Commercial						
3/4"	$44.50	$64.75	$86.96	$111.31	$135.24	$141.33
3/4"(Out)	44.50	64.75	86.96	111.31	135.24	141.33
1"	56.00	81.48	109.43	140.07	170.19	177.85
1.5"	127.50	185.51	249.14	318.90	387.46	404.90
2"	183.50	266.99	358.57	458.97	557.65	582.74
3"	340.00	494.70	664.38	850.41	1,033.25	1,079.75
4”	510.00	742.05	996.57	1,275.61	1,549.87	1,619.61
10”	1,525.00	2,218.88	2,979.96	3,814.35	4,634.44	4,842.99
Variable Charge	**$/CCF**					
All Consumption [1]	$6.00	$6.00	$6.00	$6.00	$6.00	$6.00

[1] – Residential is billed on winter water average, commercial is billed on all consumption

A more detailed discussion of the sewer rate design is provided in Section 2.3 of this report.

ES-6 Summary of the Water and Sewer Rate Study

Based on the comprehensive rate analysis completed for the City’s water and sewer utilities, it is recommended that rate revenues be adjusted to adequately fund each utility. The revenue adjustments are necessary to maintain reserves and allow the City to complete the planned capital improvement projects as well as fund O&M. Based upon the results of the cost of service analysis, no interclass adjustments (i.e. cost of service adjustments) are recommended at this time for either the water or sewer utility.

1.0 Water Rate Study

1.1 Water Revenue Requirement

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

1.1.1 Determining the Water Utility Revenue Requirement

In developing the revenue requirement, it was assumed the water 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 system 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). Provided in the following subsections is a more detailed discussion of the development of the revenue requirement analysis for the City's water utility.

1.1.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the water utility was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for the budget year 2015 plus a five-year projected time period (2016 – 2020). Reviewing a multi-year time period is recommended to help in identifying any major expenses that may be on the horizon and to be able to see any trends that may be happening in customer growth, expenses, or capital needs. 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. For the City's revenue requirement, a "cash basis" methodology was utilized. This is the most commonly used methodology by municipal utilities to set their revenue requirements. The actual revenue requirement developed for the City was customized to follow its system of accounts (budget documents). However, the revenue requirement still contains the basic cost components of a cash basis methodology.

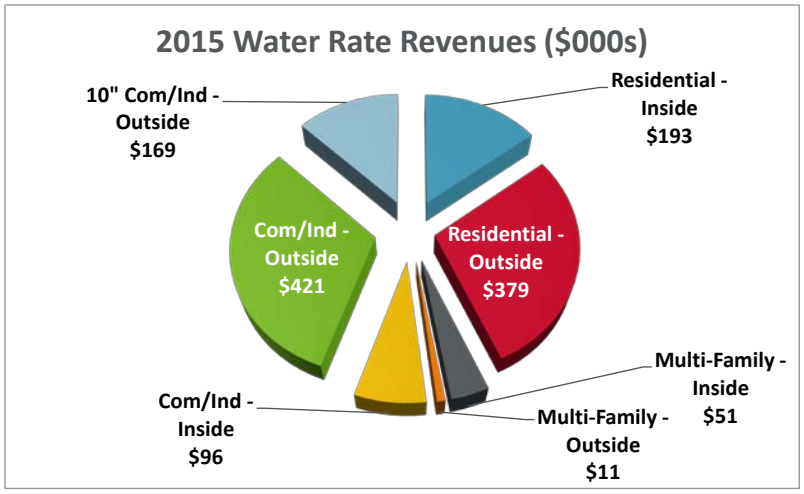
The primary financial inputs in this process were the City's historical billing records, operating budget, and current capital improvement plan. Provided below is a detailed discussion of the steps and key assumptions contained in the development of the projections of the City's water utility revenues and expenses.

1.1.3 Projection of Revenues

The City receives revenue from two primary sources, water rates and other revenue. Rate revenues are based on the current water rate structure. Other revenue includes items such as permits, deposits, and other miscellaneous revenues. The following will provide a discussion of the water revenue collected by the City.

1.1.3.1 Rate Revenue Projection

The first step in developing the revenue requirement was to develop a projection of rate revenues, at present rate levels. In general, this process involved developing projected consumption/billing units for each customer group. The billing units were then multiplied by the applicable current rates. This method of independently calculating revenues assures that the projected revenues used in the analysis tie to the projected billing units used in the cost of service and rate design analyses. The consumption for the metered customers was based on the most recent 12 month period of historical consumption records.



The City has three water customer classes of service: residential, multi-family, and commercial/industrial. Each customer class is further differentiated by those inside and outside of the city limits. A majority of the City's water rate revenue, as graphically shown above, is collected from commercial outside-city customers. At present rates, the City is projected to receive approximately $1.3 million in water rate revenues in 2015. Over the planning horizon of this study, customer growth is expected to be between 1.0% and 1.5% annually, resulting in total water rate revenues of approximately $1.4 million in 2020, before any rate adjustments.

1.1.3.2 Other Revenue

In addition to rate revenues, the City's water utility also receives a variety of other revenues. There is projected to be approximately $6,000 in other revenues in 2015. Other revenues are expected to increase slightly over time and are estimated at $10,000 in 2020.

On a combined basis, taking into account the rate revenues along with other revenues, the City's total projected revenues are expected to be approximately $1.3 million in 2015, increasing to $1.4 million in 2020.

1.1.4 Projection of Operations and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the City to operate and maintain 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 a number of different functional categories.

To forecast O&M expenses over the planning horizon, escalation factors were developed for the basic types of expenses incurred: salaries and benefits, materials and supplies, utilities, insurance, and miscellaneous expenses. Escalation factors were projected based on recent inflationary trends and assumed to be approximately 1.0% - 6.0% per year depending on the specific cost category.

The total water operation and maintenance expenses for the City are projected to be approximately $726,000 in 2015. O&M expenses are projected to increase to approximately $837,000 in 2020 primarily as a result of assumed inflation over the time period. No additional O&M was anticipated or incorporated over the review period.

1.1.5 Capital Improvement Projects

The City has a capital improvement plan that was utilized for the rate study. The water capital improvement plan (CIP) totals approximately $2.4 million over the 2015 – 2020 time horizon. 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 include the water system improvement fund[1], developer funded, and long-term borrowing. Table 1-1 provides a summary of the CIP and funding sources for the 2015 – 2020 rate setting period.

[1] The primary sources of funds for the system improvement fund include approximately $80,000 to 90,000 in annual water hookup fees and an annual transfer of $225,000 from the Operating Fund.

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

	2015	2016	2017	2018	2019	2020
Capital Improvement Projects						
Upgrade Water meters (Radio Read)	$100	$0	$0	$0	$0	$0
Water/Sewer Rate Study (50%)	15	0	0	0	0	0
Update Water System Plan	40	0	0	0	0	0
Water Line Replacements	15	0	0	0	0	0
Water Plant Turbidity Sensors	10	0	0	0	0	0
WTP Software	0	40	0	0	0	0
Simmons Road Booster Station Replcmnt	0	0	0	256	0	0
Lower Green Mountain Reservoir Replacement and new Agate Mt BPS	0	0	0	0	0	604
South Port to Todd Road Water Main	0	536	0	0	0	0
Simmons Reservoir Replcmnt Project	0	0	0	0	398	0
Old Pacific Highway Water Main	0	0	306	0	0	0
Future Unidentified Projects	0	0	0	0	0	74
Total Capital Improvements	**$180**	**$576**	**$306**	**$256**	**$398**	**$678**
Less: Outside Funding Sources						
Fund 408 - Water Sys Improv. Reserve	$180	$61	$126	$55	$173	$0
Fund 410 - Public Works Equipment Reserve	0	0	0	0	0	0
Developer Funded	0	0	0	0	0	423
Assumed New Low Interest Loan	0	350	0	0	0	0
Additional Revenue Bonds	0	0	0	0	0	0
Total Funding Sources	**$180**	**$411**	**$126**	**$55**	**$173**	**$423**
Rate Funded Capital	**$0**	**$165**	**$180**	**$200**	**$225**	**$255**

There are a number of different methods which may be used to fund the capital needs. Among them are long-term debt, grants, tap fees, capital reserves, and rates. As shown in Table 1-1, the City is funding the water CIP primarily through rates and the water system improvement reserve. Hookup fees and transfers from the operating fund are the primary funding sources for the water system improvement reserve. It is also assumed that the City will issue a low interest loan to help fund the South Port to Todd Road water main project.

A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates. Annual depreciation expense reflects the current investment in plant being depreciated or "losing" its useful life. Therefore, this portion of plant investment needs to be replaced to maintain the existing level of infrastructure. In addition, consideration should be given to rate funding some amount greater than annual depreciation expense for renewals and replacements as costs escalate over time. The City of Kalama doesn't currently keep track of depreciation expense so this figure was

estimated based on the current asset listing. The depreciation expense for 2014 was estimated at $350,000. Over the review period, City funding of the renewal and replacement projects starts at $165,000 in 2016 and ramps up to $255,000 in 2020. The City will need to continue to increase this line item annually for adequate funding of its renewal and replacement needs.

1.1.6 Taxes & Transfers

The next component of the revenue requirement is related to taxes and transfers. Typically, this component contains any taxes payable to local, state, or federal governments, as well as any transfer payments that the utility may make. The City's water utility makes transfers to the equipment reserve, the benefit reserve, and the general fund for services such as accounting. The water utility also pays state taxes of 5.029% of rate revenue and 1.5% of miscellaneous revenues. In 2015, taxes and transfers are $203,000. With revenue growth and inflation, that figure climbs to $263,000 in 2020.

1.1.7 Projection of Debt Service

The final component of the City's revenue requirement is debt service. There are numerous advantages and disadvantages with the issuance of long term debt and it is important to weigh all of them when deciding whether to issue long-term debt. Long term debt does have prudent applications whereby it acts as a financial device to spread the costs of a larger project, such as a new source of supply, over multiple years. Doing so then allocates the costs to the customers who are benefiting from the new project. Existing and future customers are said to be paying their fair share, as opposed to cash financing when only current customers pay for the project.

Presently, the City has two outstanding debt obligations in the form of low interest loans through the Public Works Trust Fund (PWTF) program: the Cloverdale Reservoir and the Water Treatment Plant. The debt service payment for the Cloverdale Reservoir is approximately $9,000 and is retired after 2015. The WTP loan has an annual payment of $225,000 and is scheduled to retire in 2022. As part of the capital funding analysis the City provided, it is projected that a new low interest loan will need to be issued in 2016 for the South Port to Todd Road water main projects. The issuance is calculated to be for the amount of $350,000 and the estimated annual debt service is $28,000. The terms provided by the City for the low interest loan are 2.0% interest for 20 years.

During the planning period of this study, it is assumed that the City will not require any further long-term debt issuances.

1.1.8 Summary of the Water Revenue Requirement

Given the above projections of revenues and expenses, a summary of the revenue requirement for the City's water utility is developed. In developing the water revenue requirement, consideration was given to the financial planning considerations. In particular, emphasis was placed on attempting to minimize rate impacts, yet still have adequate funds to support the operational activities and capital projects throughout the projected time period. Presented in Table 1-2 is a summary of the revenue requirement.

When reviewing Table 1-2, it is important to note the annual deficiencies are cumulative prior to any assumed revenue (rate) adjustments, that is, any adjustment in the initial years will reduce the deficiency as well as the needed revenue adjustments in the following years.

Table 1 - 2
Summary of the Water Revenue Requirements ($000s)

	Budgeted	Projected				
	2015	2016	2017	2018	2019	2020
Revenues						
Rate Revenues	$1,320	$1,333	$1,350	$1,370	$1,390	$1,411
Other Revenues	6	6	6	7	8	10
Total Revenues	**$1,326**	**$1,339**	**$1,356**	**$1,376**	**$1,398**	**$1,421**
Expenses						
O&M Expenses	$726	$747	$768	$790	$813	$837
Rate Funded Capital	0	165	180	200	225	255
Taxes & Transfers	203	237	243	250	256	263
Net Debt Service	225	225	225	225	225	225
Change in Working Capital	172	19	22	24	23	19
Total Expenses	**$1,326**	**$1,393**	**$1,438**	**$1,489**	**$1,542**	**$1,598**
Bal./(Def.) of Funds	$0	($53)	($82)	($112)	($144)	($177)
Bal. as % of Rev from Rates	0.0%	4.0%	6.1%	8.2%	10.4%	12.6%
Proposed Rate Adjustments	**0.0%**	**4.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Add'l Revenue with Rate Adj.	$0	$53	$82	$112	$144	$177
Bal./Def. After Rate Adj.	$0	$0	$0	$0	$0	$0
Avg. Residential Bill	$30.40	$31.62	$32.25	$32.89	$33.55	$34.22
Debt Service Coverage						
Before Rate Adjustment	2.34	2.31	2.28	2.27	2.25	2.24
After Rate Adjustment	2.34	2.54	2.65	2.77	2.89	3.03

The results of the water revenue requirement analysis indicate a deficiency of funds over the rate setting period (2016 – 2020). The deficiency ranges by year and is driven by the capital funding plan, meeting financial targets, and the assumed annual escalation of operational expenses. The cumulative deficiency, prior to any assumed rate adjustments, is approximately $53,000 in 2016 increasing to $177,000 in 2020. The proposed rate adjustments are intended to provide adequate funding for annual operating, debt service, and capital needs. To meet these requirements and financial targets, rate revenue adjustments of 4.0% for 2016 and 2.0% annually thereafter are proposed at this time.

1.1.9 Debt Service Coverage Ratios

Generally, long-term debt issues contain rate covenants requiring rates to be set at an adequate level to assure meeting a specified minimum debt service coverage (DSC) ratio. DSC is a financial measure of the utility's ability to repay the debt. Typically, the DSC ratio is set at a

level such that revenues less operating expenses will be 1.30 times greater than the maximum annual debt service on the outstanding debt. However, each specific debt issue may have its own rate covenant and minimum debt ratio. Given a minimum DSC, it is prudent to plan or set rates at a level which exceeds this minimum requirement. This provides greater assurance of meeting the minimum DSC and a slight cushion for unexpected changes (e.g. reduced sales). A higher DSC ratio should also strengthen the City's ability to issue long-term debt in the future, if necessary, since the financial market would review the past financial strength and the City's ability to repay the debt. In 2015, the DSC is projected to be 2.34, which is strong. Over time, without rate adjustments the projected DSC drops to 2.24 by 2020. With the proposed rate adjustments, the DSC is projected to be 3.03 in 2020.

1.1.10 Review of Reserve Levels

Reserves are an important part of a utility's financial picture. There can be many different purposes or uses for reserves. For this review, the City's water utility has been set up with three reserve funds including the Operating Fund, Water System Improvement Reserve, and Equipment Reserve.

The water Operating Fund reserve is designated to handle cash-flow issues and mitigate annual budget revenue shortfalls (actual revenue less than projected revenue), should they occur, due to changes in the economic environment and/or one-time unanticipated expenditures. The minimum target reserve is 90 days of operating expense. In 2015, the Operating Fund had a beginning balance of $75,000. This is projected to increase over the review period and has an ending balance of $354,000 in 2020. This exceeds the target funding level of 90 days of O&M expenses.

The Water System Improvement reserve enables the City to store funds in surplus years and apply them to capital projects in those years that are more capital project intensive. This strategy will further help the utility smooth rate adjustments and avoid any large fluctuations in rates. This reserve has a beginning balance of $313,000 in 2015. Changes to the projected fund balance include a one-time inter-fund loan repayment of $275,000 in 2015. Other additions to the fund balance include approximately $80,000 to 90,000 in annual water hookup fees and an annual transfer of $225,000 from the Operating Fund. After spending from this fund on debt service and capital projects, the projected ending balance in 2020 is approximately $399,000.

The water utility's share of the Equipment Reserve fund was $32,000 at the beginning of 2015. After additions to this fund, the projected ending balance in 2020 is $214,000. Presently, the City has no plans to spend money from this fund on equipment.

In total, the City's water reserve funds are projected to increase from $420,000 at the beginning of 2015 to nearly $970,000 at the end of 2020. Half of this increase can be linked to the inter-fund loan repayment in 2015. The other half is due to a combination of projected customer and consumptive growth, consistently increasing revenue from hookup fees, and consistent transfers of funds to the Equipment Reserve for water treatment plant equipment and meter replacement.

1.1.11 Water Revenue Requirement Recommendations

Based upon the revenue requirement analysis developed herein, HDR recommends adjustments of 4.0% in 2016 and 2.0% annually from 2017 – 2020. The proposed adjustments should allow the City's water utility to fully fund projected operations and planned capital improvements, as well as continue to maintain its financially secure footing going forward.

1.2 Water Cost of Service

In the previous subsection, 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 discuss the development of the cost of service analysis.

A cost of service analysis is concerned with the equitable allocation of the total revenue requirement between the various customer classes of service (e.g., residential, commercial). The 2016 revenue requirement was utilized in the development of the cost of service analysis.

In recent years, increasing emphasis has been placed on cost of service studies by government agencies, customers, utility regulatory commissions, and other parties. This interest has been generated in part by continued inflationary trends, increased operating and capital expenditures, and concerns of equity in rates among customers. Following the generally-accepted guidelines and principles of a cost of service analysis will inherently lead to rates which are equitable, cost-based, and not viewed as arbitrary in nature.

1.2.1 Objectives of a Cost of Service Study

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

1. Equitably allocate the revenue requirement between the customer classes of service
2. Derive average unit costs for subsequent rate designs

The objectives of the water cost of service analysis are different from determining the revenue requirement. As noted in the previous section, a revenue requirement analysis determines the utility's overall financial needs, whereas the cost of service study determines the fair and equitable manner to collect the revenue requirement from each class of service.

The second rationale for conducting a cost of service analysis is to ensure a rate is designed such that it properly reflects the costs incurred by the utility in providing the service. For example, a water utility incurs costs related to average day, peak day, fire protection, and customer-related cost components. A water utility must build sufficient capacity to meet peak capacity needs. Therefore, the customers creating this peak requirement should pay their equitable share of the cost to meet this peak demand requirement.

1.2.2 Determining the Customer Classes of Service

The first step in a cost of service study is to determine the customer classes of service. Currently, the City has a separate rate schedule for all of its customers, with an outside city differential as well. Based on the current rate schedules and customer characteristics the classes of service used within the water cost of service study are:

- Residential (inside)
- Residential (outside)
- Multi-Family (inside)
- Multi-Family (outside)
- Commercial/Industrial (inside)
- Commercial/Industrial (outside)
- 10” Com/Ind - Outside

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 requirement and/or flow characteristics.

1.2.3 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 was conducted. This analysis utilizes a three-step approach to review costs. These steps are 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.

1.2.3.1 Functionalization of Costs

The first analytical step in the cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (infrastructure) data by major operating functions. For example, the water utility functional components are related to source of supply, treatment, pumping, distribution, etc. Within this study, the functionalization of the cost data was largely accomplished through the water utility’s system of accounts.

1.2.3.2 Allocation of Costs

The second analytical task performed in a water 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 water utility’s plant accounts (infrastructure) and revenue requirement (operating expenses) were reviewed and allocated using the following cost allocations:

- **Commodity-Related Costs:** Commodity-related costs are those incurred under average load (demand) conditions and are generally specified for a period of time such as a year. Chemicals or electricity used in the treatment of water are an example of a commodity-related cost, since these costs tend to vary based upon the total production of water.
- **Capacity-Related Costs:** Capacity costs are those which vary with peak demand, or the maximum rates of flow to customers. 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 for this particular type of requirement.
- **Customer-Related Costs:** Customer costs are those cost which vary with the number of customers on the system and do not vary with consumption levels. An example is postage

for mailing bills as the cost does not vary from customer to customer based on size or consumption characteristics.

- **Public Fire Protection-Related Costs:** Public fire protection costs are those costs related to providing fire protection through the water system. Fire protection costs are related to hydrants, the over-sizing of mains and distribution storage reservoirs.
- **Revenue-Related Costs:** Certain costs associated with the utility may vary with the amount of revenue received. An example is a tax based upon the amount of rate revenues received by the water utility.
- **Direct Assignments:** Sometimes, certain operating costs may be traced directly to a specific customer or class of service (e.g., bad debt expenses). In such cases, these costs are then directly assigned to that specific class of service. This assures that other classes of service will not be allocated any portion of costs or facilities from which they do not benefit.

1.2.3.3 Development of Distribution Factors

Once the classification process is complete, and the customer groups have been defined, the various allocated costs are distributed to each customer group. The water utility's allocated costs were distributed to the various customer groups using the following distribution factors.

- **Commodity Distribution Factor:** As noted earlier, commodity-related costs vary with the total flow of water. The commodity allocation factor was based upon the projected total metered consumption plus system losses for each class of service for the projected test period (2016).
- **Capacity Distribution Factor:** The capacity allocation factor was developed based on the assumed contribution to peak day use of each class. Peak day use by customer group was estimated using assumed monthly metered consumption data for each customer group. The peaking factor was defined as the relationship between peak month contribution and average month use. Peaking factors were determined for each customer class based on a review of the City's consumption data.
- **Customer Distribution Factor:** Customer costs vary with the number of customers on the system. Several different types of customer allocation factors were developed for the water utility's cost of service study. The first customer allocation factor was based on the number of accounts in each class of service. This was the primary allocation factor used in the distribution of costs. The second customer allocation factor was based on the number of customers developed within the revenue requirement by customer class of service. The final customer allocation factor was based on a weighted basis to reflect any cost differences associated with serving the various customer classes of service.
- **Public Fire Protection Distribution Factor:** The development of the allocation factor for public fire protection expenses involved an analysis of each class of service and their fire flow requirements.
- **Revenue-Related Distribution Factor:** The revenue-related allocation factor was developed from the projected rate revenues for 2016 for each customer group. These same revenues were used within the revenue requirement analysis.

1.2.4 Functionalization and Allocation of Water Plant in Service

The first step of the cost of service is the functionalization and allocation of water plant in service. In performing the functionalization of plant in service, HDR utilized the City's asset list which included the original year in service and the original cost. From this listing, the net book value for each asset was calculated. Once the plant assets were functionalized, the analysis shifted to allocation of the asset. The allocation process included reviewing each group of assets and determining which cost classifiers the assets were related to. The City's assets were allocated as: capacity-related, commodity-related, customer-related, public fire protection-related, revenue-related, or directly assigned.

1.2.4.1 Treatment

The treatment plant assets were allocated between commodity and capacity-related costs as they provide both average day and peak day services. The facilities were classified as 47% commodity related and 53% capacity related. This allocation reflects the water system's peak demand needs in relation to their average day needs.

1.2.4.2 Pump Stations

Similar to source of supply, the water system's assets related to pumping were allocated 53% to capacity and 47% to commodity to reflect the use of these assets for both average day and peak day needs.

1.2.4.3 Storage

Water storage assets were allocated 79% to capacity to handle the peak day needs and 21% to public fire protection. This allocation reflects the water system's oversizing related to meeting fire protection needs, as well as how the tanks are sized to meet peak day demands.

1.2.4.4 Transmission and Distribution

Water 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 requirements for water. This portion of the distribution main plant investment is considered customer related, or a function of the number of customers on the system. Next, a portion of the distribution system mains is considered a function of peak flow requirements on the system. Distribution mains must be sized to adequately meet the peak flows demanded by customers. This portion of the distribution main plant investment is considered capacity-related. Finally, distribution mains must also be sized for fire flow demands. This final portion of over-sizing for distribution plant investment is classified as public fire protection related. The allocation of the distribution mains was therefore 50% capacity, 35% actual customer, and 15% fire protection related.

1.2.5 Functionalization and Allocation of Operating Expenses

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 (classification percentages) as the plant account for distribution mains. This approach to allocation of operating expenses was used for this analysis. For the City's water cost of service study, the revenue requirement for 2016 was functionalized, allocated, and distributed. As noted earlier, the City utilized a "cash basis" revenue requirement but for the cost of service, a "utility-basis" was used as it allows for a return component which

is needed given the differential for outside city customers. A more detailed review of the classification of revenue requirements can be found in the Technical Appendices.

1.2.6 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.

- The test period used for the cost of service analysis was 2016. The revenue and expense data was previously developed within the revenue requirement analysis.
- A "utility basis" approach was utilized which conforms to generally accepted water cost of service approaches and methodologies.
- The water system's infrastructure costs were based on the book value of the existing system.
- The allocation of plant in service was developed based upon generally accepted cost allocation techniques.
- Metered consumption data used within this study was provided for each class of service from the City's historical usage information.
- Capacity allocation factors were based on a review of the consumption data for each customer class of service, along with certain estimates of the relationship by class of service.

1.2.7 Summary of the Cost of Service Results

In summary, the cost of service analysis began by functionalizing the water plant asset records and then the 2016 water revenue requirement. The functionalized plant and expense accounts were then allocated into their various cost components. The individual allocation totals were then distributed to the various customer groups based upon the appropriate distribution factors. The distributed expenses for each customer group were then aggregated to determine each customer group's overall revenue responsibility. A summary of the detailed cost responsibility developed for each class of service is shown in Table 1-3.

Table 1 – 3
Summary of the Water Cost of Service Analysis ($000s)

Class of Service	Present Rate Revenue	Allocated Costs	Plus: Return Component	Total Allocated Costs	$ Difference	% Difference
Residential - Inside	$194	$309	($106)	$203	($9)	4.5%
Residential - Outside	382	308	85	393	(11)	2.7%
Multi-Family - Inside	52	75	(28)	47	5	-9.4%
Multi-Family - Outside	11	9	3	12	(1)	5.9%
Com/Ind - Inside	97	127	(49)	78	19	-19.3%
Com/Ind - Outside	425	375	120	494	(69)	16.2%
10" Com/Ind - Outside	171	124	34	159	12	-7.1%
Total	**$1,333**	**$1,327**	**$59**	**$1,386**	**($53)**	**4.0%**

The distribution of costs reflects the facilities and costs distributed to each customer class based on their respective benefit. A simple rule for assessing the cost of service is if a class is within +/- 5% of the overall system wide adjustment, then the class is presumed to be paying its "fair share". The water cost of service results indicate that minor costs differences exist between customer classes.

1.2.8 Consultant's Conclusions and Recommendations

As noted in Table 1-3, minor cost differences exist between the various classes of service. At this time, it is not recommended that any interclass cost of service adjustments be made which would change the customer classes' revenue target. This is due to the fact that this is the first cost of service analysis that the City has undertaken. It is important to note that cost of service results can change over time as customer consumption patterns and facility requirements change as a result of rate adjustments, economic factors, or other influences on water consumption. The results can even vary substantially from year to year. For this reason, it is recommended that this study be used as an initial test and a subsequent cost of service analysis be completed in the future. The results should be compared and if the studies show similar results, the City may need to make interclass adjustments to reflect the cost of service results.

1.2.9 Summary

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

1.3 Water Rate Design

The final step of the comprehensive rate study process is the design of water rates to collect the desired levels of revenues, based upon the results of the revenue requirement and cost of service analyses. In reviewing the rate designs, consideration is given to the level of the rates and the structure of the rates. The level of the rates refers to the amount of revenue that needs to be collected (i.e., $1,000,000) while the structure of the rates refers to how the customers are charged to collect the target revenue levels.

1.3.1 Rate Design Goals and Objectives

Prudent rate administration dictates that several criteria must be considered when setting utility rates. Some of these rate design goals 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 conservation, 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)

Many contemporary rate economists and regulatory agencies feel the last consideration, cost-based rates, should be of paramount importance and provide the primary guidance to utilities on rate structure and policy. HDR agrees that equitable and non-discriminatory rates are paramount to providing customers with a proper price signal as to what their consumption is 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 should be noted that 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 the goals and objectives.

1.3.2 Review of the Overall Rate Adjustments

The results of the revenue requirement indicated the need to adjust rates over the next five years. As a result, the priority for the City was to implement rates that meet the overall funding needs for operating and capital over the review period. As noted in the cost of service analysis, minor cost differences exist between customer classes but with all the considerations taken into account, the revenue targets for each class have not been adjusted. Based on the discussion with City staff, water rates have been developed for the five-year period of 2016 to 2020 based on the rate transition plan.

1.3.3 Rate Alternatives

After the revenue requirement and cost of service analyses determined the magnitude and distribution of revenue needed to fund the water utility, rate design alternatives were developed for review by City staff and management. HDR developed rates around two alternatives:

- **Alternative 1:** Current rate structure with across-the-board rate adjustments
- **Alternative 2:** Current rate structure with increased fixed charges

Each alternative rate structure had certain advantages and disadvantages, along with different bill (dollar) impacts at varying consumption levels.

1.3.4 Present and Proposed Water Rates

In developing the proposed water rate designs, and as noted previously, the City's existing rate structure was examined and analyzed. Based on the proposed rate transition plan, and the alternative rate structure, proposed rates were developed for 2016 – 2020 for each class of service. As noted, the proposed rate structure will be the same for all customer classes of service. The City also has in place an outside City differential which is used to earn a return on investment for providing service outside of its jurisdiction. For residential customers, the outside city differential is 85%; for commercial it's 50%. The City also has a program for low income residents. A discount of $5.75/month for the fixed charge and $0.20/CCF for the volumetric charge is given after the resident has been approved.

The City's current rate structure is contemporary, effective at collecting revenues, and successful at achieving the goals of the City. For these reasons, it was not recommended to change the rate structure at this time.

1.3.4.1 Present and Proposed Residential Rates

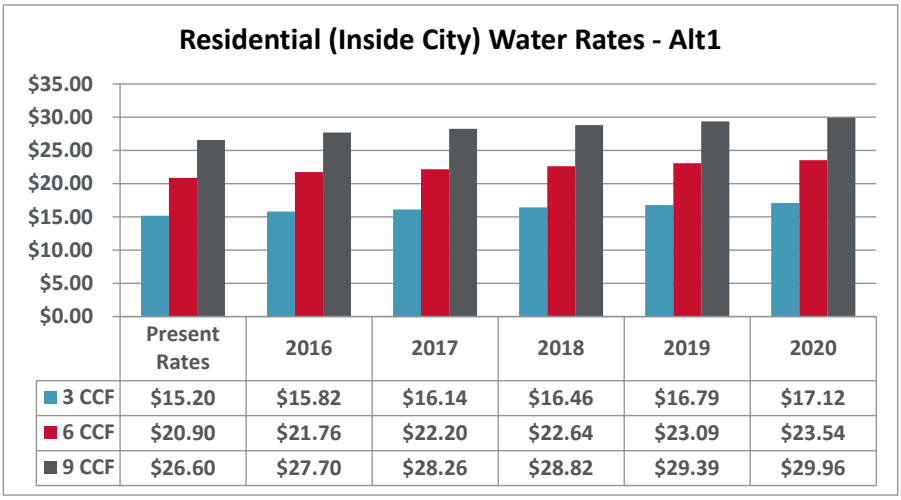
The present (current) residential rate structure includes a monthly fixed charge which is charged on a per account basis as well as a uniform consumption charge on a per CCF basis.

In developing the proposed residential rates, the basic elements of the current rate structure were maintained. Additionally, the outside city differentials were not adjusted. Table 1-4 provides a summary of the present and proposed rates for residential customers.

Table 1 – 4
Present and Proposed Residential Water Rates – Alternative 1

	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Inside City - ¾" or 1"	$9.50	$9.88	$10.08	$10.28	$10.49	$10.70
Outside City – ¾" or 1"	$17.58	$18.28	$18.65	$19.02	$19.41	$19.80
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.98	$2.02	$2.06	$2.10	$2.14
Outside City - All Consumption	3.52	3.66	3.74	3.81	3.89	3.96

At present rates, a typical residential customer which uses 6 CCF of monthly water consumption would pay $20.90. Under the proposed rates, the same customer would pay $21.76 in 2016 and $22.20 in 2017. This results in a $0.86 and $1.30 per month increase, respectively. Bill comparisons are included within the technical appendices to show the range of impacts to customers based on various consumption levels.

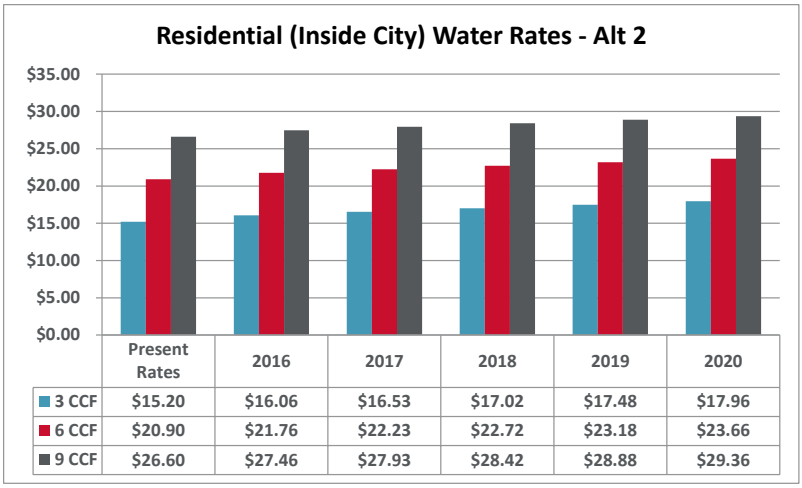


The second alternative, as previously mentioned maintains the current rate structure. Also unchanged are the rate adjustments from the rate transition plan. Unlike the first alternative, however, which applies the rate adjustment to all the components of the rate design, the second alternative only increases the fixed charge component. This will increase the fixed revenue for the water utility and improve

revenue stability. Table 1-5 provides a summary of the inside and outside city rates for residential customers under Alternative 2.

Table 1 – 5
Present and Proposed Residential Water Rates – Alternative 2

	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Inside City - ¾" or 1"	$9.50	$10.36	$10.83	$11.32	$11.78	$12.26
Outside City – ¾" or 1"	$17.58	$19.17	$20.04	$20.94	$21.79	$22.68
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.90	$1.90	$1.90	$1.90	$1.90
Outside City - All Consumption	3.52	3.52	3.52	3.52	3.52	3.52



Under the proposed Alternative 2 rates, a typical residential customer with 6 CCF of monthly consumption would pay $21.76 in 2016 and $22.23 in 2017. This results in a $0.86 and $1.33 per month increase, respectively, over the same bill at present rates. Bill comparisons are included within the technical appendices to show the range of impacts to customers based on various consumption levels.

1.3.4.2 Present and Proposed Multi-Family Rates

The present multi-family rate structure includes a monthly fixed charge which is charged on a per unit basis. The consumption charge is a uniform rate charged on a per CCF basis. The proposed multi-family rate structure is the same as the proposed residential rate structure. The proposed rates maintain the current fixed and variable charges. Table 1-6 is a summary of the present and proposed rates for the multi-family customers.

Table 1 – 6 Present and Proposed Multi-Family Water Rates – Alternative 1						
	Present Rate	**Proposed**				
		2016	**2017**	**2018**	**2019**	**2020**
Fixed Charge ($/Acct./Mo)						
Inside City - ¾"	$15.00	$15.60	$15.91	$16.23	$16.55	$16.88
Inside City – 1"	25.00	26.00	26.52	27.05	27.59	28.14
Inside City – 2"	80.00	83.20	84.86	86.56	88.29	90.06
Outside City – ¾"	$27.75	$28.86	$29.43	$30.03	$30.62	$31.23
Outside City – 1"	46.25	48.10	49.06	50.04	51.04	52.06
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.98	$2.02	$2.06	$2.10	$2.14
Outside City - All Consumption	3.52	3.66	3.74	3.81	3.89	3.96

Again, there is no significant change to the multi-family rate structure. The proposed rate adjustments were simply applied across the board to all rate components in Alternative 1. Bill impacts will vary depending on the specific customer account consumption.

Alternative 2, summarized below in Table 1-7, utilizes the same overall rate revenue adjustments as Alternative 1. However, the rate adjustment is only applied to the fixed charge. This is done in order to increase fixed revenues and provide greater revenue stability for the water utility.

Table 1 – 7 Present and Proposed Multi-Family Water Rates – Alternative 2						
	Present Rate	**Proposed**				
		2016	**2017**	**2018**	**2019**	**2020**
Fixed Charge ($/Acct./Mo)						
Inside City - ¾"	$15.00	$17.10	$18.21	$19.39	$20.55	$21.72
Inside City – 1"	25.00	28.50	30.35	32.32	34.26	36.21
Inside City – 2"	80.00	91.20	97.13	103.44	109.65	115.90
Outside City – ¾"	$27.75	$31.64	$33.69	$35.87	$38.02	$40.18
Outside City – 1"	46.25	52.73	56.15	59.79	63.38	66.99
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.90	$1.90	$1.90	$1.90	$1.90
Outside City - All Consumption	3.52	3.52	3.52	3.52	3.52	3.52

1.3.4.3 Commercial/Industrial Water Rate Design

Currently, commercial/industrial customers are charged in the same manner as residential and multi-family with a fixed monthly charge and uniform rate consumption charge. There is also an outside city differential in place for the City, but for commercial it is 50%. The proposed rate structure maintains the same components as the current rate structure. For Alternative 1, all the rate structure components for commercial/industrial customers have been adjusted according to the rate transition plan. Table 1-8 provides the present and proposed non-residential rates.

Table 1 – 8
Present and Proposed Commercial/Industrial Water Rates – Alternative 1

	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Inside City						
3/4"	$11.50	$11.96	$12.20	$12.44	$12.69	$12.94
1"	14.50	15.08	15.38	15.69	16.00	16.32
1.5"	68.00	70.72	72.13	73.57	75.04	76.54
2"	115.00	119.60	121.99	124.43	126.92	129.46
3"	175.00	182.00	185.64	189.35	193.14	197.00
4"	235.00	244.40	249.29	254.28	259.37	264.56
Outside City						
3/4"	$17.25	$17.94	$18.30	$18.66	$19.04	$19.41
1"	21.75	22.62	23.07	23.54	24.00	24.48
1.5"	102.00	106.08	108.20	110.36	112.56	114.81
2"	172.50	179.40	182.99	186.65	190.38	194.19
3"	262.50	273.00	278.46	284.02	289.71	295.50
4"	352.50	366.60	373.94	381.42	389.06	396.84
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.98	$2.02	$2.06	$2.10	$2.14
Outside City - All Consumption	2.85	2.97	3.03	3.09	3.15	3.21

The second alternative for commercial/industrial customers uses the same basic rate structure as Alternative 1. The difference is that the proposed rate revenue adjustment is applied only to the meter charge and the volumetric component remains unchanged. This is done as a measure to increase fixed revenues and expand the revenue stability of the water utility. Table 1-9 is a summary of the proposed rates for Alternative 2.

Table 1 – 9
Present and Proposed Commercial/Industrial Water Rates – Alternative 2

	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Inside City						
3/4"	$11.50	$15.53	$17.47	$19.48	$21.53	$23.58
1"	14.50	19.58	22.03	24.56	27.14	29.72
1.5"	68.00	91.80	103.27	115.15	127.24	139.33
2"	115.00	115.00	129.38	144.26	159.41	174.55
3"	175.00	175.00	196.88	219.52	242.57	265.61
4"	235.00	235.00	264.38	294.78	325.73	356.67
Outside City						
3/4"	$17.25	$23.30	$26.21	$29.22	$32.30	$35.37
1"	21.75	29.37	33.05	36.84	40.71	44.58
1.5"	102.00	137.70	154.91	172.73	190.86	209.00
2"	172.50	172.50	194.07	216.39	239.12	261.83
3"	262.50	262.50	295.32	329.28	363.86	398.42
4"	352.50	352.50	396.57	442.17	488.60	535.01
Volume Charge ($/CCF)						
Inside City – All Consumption	$1.90	$1.96	$1.96	$1.96	$1.96	$1.96
Outside City - All Consumption	2.85	2.94	2.94	2.94	2.94	2.94

1.3.4.4 Large User

The City currently has a single qualified, large user. This customer has the same current rate structure as the other commercial customer with one exception. The consumption charge is a declining block rate structure instead of a uniform. This is typically afforded to large users that will have a flat consumption profile with little to no peaking. This means that the customer will use approximately the same, large amount of water on a consistent basis. This makes the demands on the system more predictable. Table 1-10 includes a summary of the present and proposed rates for the large user under Alternative 1.

Table 1 – 10 Present and Proposed Large User Water Rates – Alternative 1						
	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Outside City - 10"	$700.00	$728.00	$742.56	$757.41	$772.56	$788.01
Volume Charge ($/CCF)						
0 - 3,500	$2.55	$2.65	$2.70	$2.75	$2.81	$2.87
3,501 - 20,000	2.10	2.17	2.21	2.25	2.30	2.35

For the second alternative, the fixed charge is again the only component increased. The rate revenues for the large user customer are approximately 5% sourced from the fixed charge. Although this type of user may often have a much lower fixed charge component on a percentage basis then a typical commercial or industrial customer, this level of fixed revenue is substantially low. For Alternative 2, in conjunction with moving toward a higher fixed charge, the declining block rate structure is moved to a uniform consumption charge on a per CCF basis, just as the other classes of service. This is a more contemporary rate design and reflects current industry trends. Table 1-11 is a summary of the large user rate schedule under Alternative 2.

Table 1 – 11 Present and Proposed Large User Water Rates – Alternative 2						
	Present Rate	Proposed				
		2016	2017	2018	2019	2020
Fixed Charge ($/Acct./Mo)						
Outside City - 10"	$700.00	$945.00	$1,086.75	$1,249.76	$1,399.73	$1,609.69
Volume Charge ($/CCF)						
0 - 3,500	$2.55	$2.55	$2.55	$2.55	$2.55	N/A
3,501 - 20,000	2.10	2.27	2.35	2.42	2.50	N/A
All Consumption	N/A	N/A	N/A	N/A	N/A	$2.55

1.4 Summary of the Water Rate Study Update

This completes the rate study for the City's water utility. Based on the operating and capital needs, it is recommended that rates be increased 4.0% in 2016 and 2.0% annually from 2017 to 2020 with a transition for the consumption component for the non-residential customers. These proposed adjustments will enable the City to remain strong fiscally and maintain the ability to react to unforeseen changes and future improvement needs. Full and complete technical appendices of the development of the water rate study and the proposed rate adjustments can be found in the appendices of this report.

2.0 Sewer Rate Study

2.1 Sewer Revenue Requirement

This section of the report provides a detailed discussion of the development of the sewer rate study. Similar to the water rate study, a revenue requirement, cost of service, and rate design analyses were conducted for the City's sewer utility. One of the main objectives of the sewer rate study is to develop cost-based sewer rates while attempting to minimize the impacts to the utility's customers. Provided below is a detailed discussion of the technical analyses, along with our findings, conclusions and recommendations.

2.1.1 Determining the Sewer Utility Revenue Requirement

In developing the sewer revenue requirement, similar to the water utility, it was assumed the sewer 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 system on a financially prudent basis.

2.1.2 Establishing a Time Frame and Approach

The first step in calculating the revenue requirement for the sewer utility was to establish a time frame for the revenue requirement analysis. For this study, the revenue requirement was developed for the 2015 budget and projected time period of 2016 – 2020, the same time period reviewed for the water utility. Reviewing a multi-year time period is recommended in an attempt to identify any major expenses that may be on the horizon. By anticipating future financial requirements, the City can begin planning for these expenses sooner, avoiding future sewer rate spikes and minimizing rates to the extent possible.

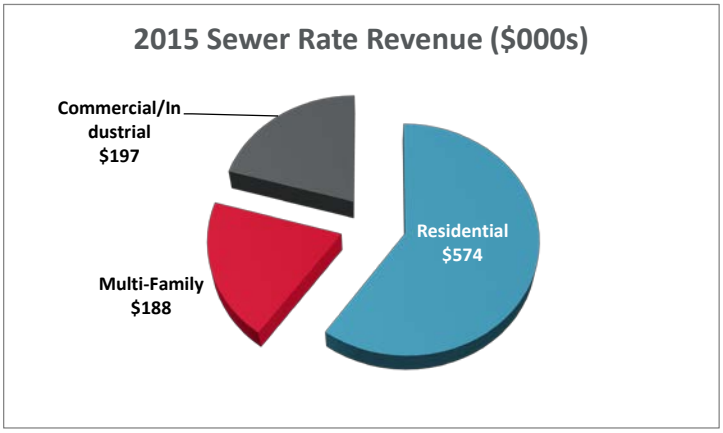
The second step in determining the revenue requirement for the City was to decide on the basis of accumulating costs. As noted, the water utility's revenue requirement was established using a "cash basis" approach, this is the method used to develop the sewer utility revenue requirement as well. Again, the cash basis approach is the most commonly used methodology by municipal utilities to set their revenue requirement. The actual revenue requirement developed was customized to follow the existing sewer system of accounts.

The primary financial inputs in this process were the City's historical customer and billing records, sewer budget, and sewer capital improvement plan. Presented below is a discussion of the steps and key assumptions contained in the development of the projections of the sewer utility's revenues and expenses.

2.1.3 Projecting Sewer Rate Revenue and Other Miscellaneous Revenues

The first step in developing the revenue requirement was to develop a projection of sewer rate revenues, at present (current) rate levels. In general, this process involved developing projected number of customers and billed flows for each customer class of service. For commercial customers, all water use is utilized and billed whereas for residential customers, only the winter water average is billed. The number of accounts for each customer class and the billed flows

were then multiplied by the respective sewer charges. This method of independently calculating sewer rate revenues helps to confirm that the projected revenues used within the analysis tie to the projected billing units for cost of service and rate design analyses. The projected billing units by class of service were based on historical billing records.



There are three customer classes of service: residential, multi-family, and commercial/industrial. At present sewer rates, the City is projected to receive approximately $960,000 in rate revenue in 2015. Over the planning horizon of this study, customer growth is expected to be 1.0% annually, resulting in projected rate revenues of approximately $1.0 million in 2020.

In addition to rate revenues, the utility receives a minimal amount of other revenues from items including reimbursements, fees, other miscellaneous revenue, and earned interest. The utility is projected to receive approximately $3,300 in miscellaneous revenues in 2015 which increases to $4,400 in 2020.

In total, including both sewer rate and miscellaneous revenues, the sewer utility's total projected revenues are expected to be approximately $963,000 in 2015 and, with assumed growth, gradually increase to $1.0 million by 2020.

2.1.4 Projecting Operation and Maintenance Expenses

Operation and maintenance (O&M) expenses are incurred by the utility to operate and maintain the existing sewer plant in service. The costs incurred in this area are expensed during the current year and are not capitalized or depreciated. To begin the process of projecting O&M expenses over the planning horizon, escalation factors were developed for the basic types of expenses the City incurs: salaries, benefits, materials and supplies, utilities, equipment, insurance, medical benefits, and miscellaneous expenses. Consistent with the water utility, the escalation factors ranged from 1.0% to 6.0% per year.

To start, the 2015 budgeted O&M expenses were taken and projected over the five year period based on the escalation factors described above for each of the various categories. The total O&M expenses for the sewer utility in 2015 are expected to be approximately $561,000. O&M expenses are projected to gradually increase over time as a result of the assumed escalation factors. Total sewer O&M is projected to be approximately $648,000 by 2020.

2.1.5 Projecting Rate Funded Capital

The City's sewer utility has several capital improvement projects planned over the study's time horizon. Over the planning period of 2015 – 2020, there is approximately $6.4 million in projected capital projects with the majority of the projects planned for 2018 and 2019. A summary of the capital funding plan developed for the City's sewer utility is shown in Table 2-1. Table 2-1 also includes assumed funding sources for the projects.

Table 2 - 1
Summary of the Sewer Capital Improvement Plan ($000s)

Capital Projects	2015	2016	2017	2018	2019	2020
Replace Sections of Leaking Sewer Line	$0	$25	$25	$25	$25	$25
Purchase Pipe Camera	0	0	0	0	0	0
Replace Equipment at Wastewater Treatment Plant	0	10	0	0	40	40
Install New Sewer Line Cloverdale to Parkland	0	0	250	0	0	0
Install New Sewer Line Rebel Under I-5 to Hendrickson	0	0	0	300	0	0
Install Pump Station at Rebel	0	0	0	400	0	0
Install New Sewer Line Hendrickson @ Temco to WWTP	0	0	0	1,000	0	0
Install New Sewer Line Old Pac Hwy - Stone Forest to Todd Rd	0	0	0	2,000	0	0
Lift Station Upgrades	0	0	0	25	40	40
Rehab Sewer Lines North and East Elm Street	0	0	0	0	2,000	0
Rate Study (50%)	15	0	0	0	0	0
Future Unidentified Capital Projects	0	0	0	0	0	45
Total Capital Projects	**$15**	**$35**	**$275**	**$3,750**	**$2,105**	**$150**
Less: Outside Funding Sources						
Fund 413 - I & I IMPROVEMENT RESERVE	$0	$25	$25	$25	$25	$0
Fund 415 - SEWER IMPROVEMENT RESERVE	15	10	65	105	0	50
Fund 410 –PUBLIC WORKS EQUIPMENT RESERVE	0	0	0	0	0	0
Grant	0	0	0	0	0	0
Developer Funded	0	0	125	2,300	0	0
Low Interest Loans	0	0	0	1,250	2,000	0
Revenue Bonds	0	0	0	0	0	0
Total Funding Sources	**$15**	**$35**	**$215**	**$3,680**	**$2,025**	**$50**
Rate Funded Capital	**$0**	**$0**	**$60**	**$70**	**$80**	**$100**

Among the methods that may be used to finance these capital improvement projects are long-term debt, developer funded, grants, reserves, hook-up fees, and rates. A general financial guideline states that, at a minimum, a utility should fund an amount equal to or greater than annual depreciation expense through rates. Annual depreciation expense reflects the current investment in plant being depreciated or "losing" its useful life. Therefore, this portion of plant

investment needs to be replaced to maintain the existing level of infrastructure. In addition, consideration should be given to funding within rates some amount greater than annual depreciation expense for renewals and replacements as costs escalate over time and replacement cost is greater than depreciation expense. Whenever possible, the City should be funding capital projects from rates in an amount greater than annual depreciation expense which, in 2012, was estimated at $336,000. Currently, it does not appear that there is much rate funded capital for the City but over the course of the review period, annual funding for sewer renewal and replacement projects increases to $100,000. Although this is not the level that meets depreciation expense, it is an improvement from the City's current financing mix.

2.1.6 Taxes & Transfers

The next component of the revenue requirement is related to taxes and transfers. Typically, this component contains any taxes payable to local, state, or federal governments as well as any transfer payments that the utility may make. The City's sewer utility makes transfers to the equipment reserve, the benefit reserve, and the general fund for services such as accounting. The sewer utility also pays state taxes on revenues. In 2015, taxes and transfers are $127,000. Through revenue growth and inflation, that figure will climb to $143,000 in 2020.

2.1.7 Projecting Debt Service

The final component of the sewer revenue requirement is debt service. Currently, the City has three outstanding debt obligations. All three issuances are related to the wastewater treatment plant with two state revolving fund (SRF) loans and one public works trust fund (PWTF) loan. Combined, the projected annual debt service payments for the three loans are approximately $407,000. One SRF loan is retired during the planning period in 2018 but the other two are outside the timeframe in 2022 and 2027. It is also assumed that the City will issue long-term debt in 2018 and 2019. The amounts are estimated to be $1.25 million in 2018 and $2.0 million in 2019 with debt service calculated at $80,000 and $128,000, respectively. The terms assumed for modeling purposes only are 2.0% for 20 years. HDR is not a municipal advisor, as defined by the SEC and is not giving advice or proposing structure on the issuance of debt.

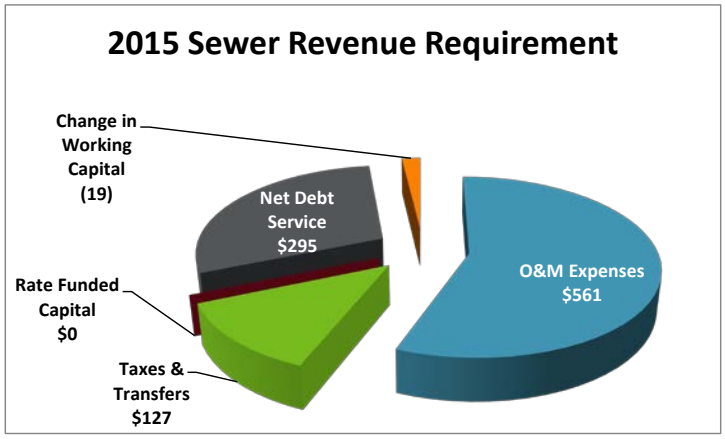
2.1.8 Summary of the Revenue Requirement

From the above projections of sewer revenues and expenses, a summary of the sewer revenue requirement analysis can be developed. Table 2-2 presents a summary of the sewer revenue requirement.

Table 2 – 2
Summary of the Sewer Revenue Requirements ($000s)

	Budgeted	Projected				
	2015	2016	2017	2018	2019	2020
Revenues						
Rate Revenues	$960	$969	$979	$989	$999	$1,009
Other Revenues	3	3	3	4	4	4
Total Revenues	**$963**	**$973**	**$982**	**$992**	**$1,003**	**$1,013**
Expenses						
O&M Expenses	$561	$577	$593	$611	$629	$648
Taxes & Transfers	127	131	132	137	138	143
Rate Funded Capital	$0	0	60	70	80	100
Net Debt Service	295	350	350	485	580	529
Change in Working Capital[1]	(19)	7	42	(1)	(0)	50
Total Expenses	**$963**	**$1,065**	**$1,177**	**$1,302**	**$1,427**	**$1,470**
Bal./(Def.) of Funds	$0	($92)	($195)	($309)	($424)	($457)
Bal. as % of Rev from Rates	0.0%	9.5%	19.9%	31.3%	42.5%	45.3%
Proposed Rate Adjustments	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**8.5%**	**2.0%**
Add'l Revenue with Rate Adj.	$0	$92	$195	$309	$424	$457
Bal./Def. After Rate Adj.	$0	$0	$0	$0	$0	($0)
Average Residential Sewer Bill	$74.50	$81.58	$89.33	$97.81	$106.13	$108.25
Debt Service Coverage						
Before Rate Adjustment	1.31	1.08	1.06	0.75	0.61	0.66
After Rate Adjustment	1.31	1.61	2.18	2.03	2.08	2.38

It is important to note that the annual deficiencies in Table 2-2 are cumulative. That is, any adjustment in the initial years will reduce the needed deficiency in the following years. The results of the revenue requirement analysis indicate a deficiency of funds over the planning period (2015 - 2020). The deficiency ranges from $92,000 in 2016 to $457,000 in 2020. The level of needed rate adjustment is being driven by a variety of factors. The City recognizes the need to adjust rates to a level that can fund the daily operations, debt service, and capital projects over the five year period. Based on the City's sewer revenue requirement analysis, it is proposed that sewer rate be adjusted by 9.5% annually from 2016 through 2018, 8.5% in 2019, and 2.0% in 2020. This rate transition plan will provide the flexibility to fund the necessary capital



infrastructure projects while at the same time strengthen the overall financial health of the sewer utility.

2.1.9 Review of the Reserve Levels

Reserves are an important part of a utility's financial picture. There can be many different objectives and purposes for establishing reserves. The sewer utility currently has five reserve funds including the Operating Reserve Fund, I&I Improvement Reserve, Sewer Improvement Reserve, Sewer Loan Reserve, and Equipment Reserve. The Operating Reserve will mediate the cash flow variances of the utility such as storing funds when there is a surplus and using funds when there is a shortfall or deficit. This will help the sewer utility maintain stable rates and reduce fluctuations in future rates. The target minimum reserve balance for the Operating fund is 60 days of O&M expense; the Sewer Improvement Reserve target is equal to annual depreciation expense; the Sewer Loan Reserve target is prescribed by the City's sewer loan documents; the I&I Improvement Reserve and Equipment Reserve do not have specific targets at this point. The following list includes a summary of fund balances:

- Operating Fund – The 2015 beginning balance is $75,000 and the fund is projected to have and ending balance of approximately $113,000 in 2020.
- I&I Improvement Reserve – The beginning balance in 2015 is $90,000. This fund benefits in 2015 from an inter-fund loan repayment of $75,000. After capital project spending to replace sections of leaking sewer lines, the projected ending balance in 2020 is $67,000.
- Sewer Improvement Reserve – The beginning balance in 2015 is $267,000. Additions to this fund include approximately $80,000 in annual hook-up fees and an annual transfer from the Operating Fund that ranges between $300,000 and $600,000 annually. After projects and debt service payments, the ending balance in 2020 is projected to be $346,000.
- Sewer Loan Reserve – This fund will carry the balance of $232,000 until the City's existing sewer loan is retired.
- Equipment Reserve – The sewer utility's share of this fund was $32,000 at the beginning of 2015. After additions to this fund, the projected ending balance in 2020 is $52,000. Presently, the City has no plans to spend money from this fund on equipment.

2.1.10 Debt Service Coverage Ratio (DSC)

Generally, revenue bonds contain covenants requiring rates to be set at an adequate level to assure annual payments (i.e. repayment) of principal and interest. This ability to repay debt is often assessed via a debt service coverage (DSC) ratio. For more on DSC ratios, see Section 1.1.9 of this report.

On a stand-alone basis, the sewer utility currently has a calculated DSC of 1.31, but that figure decreases to 0.66 absent any rate adjustments. With the proposed rate adjustments, the sewer utility maintains a strong DSC ratio throughout the rate study planning period. It is important to note that one debt obligation is retired during the period and two issuances are added.

2.1.11 Consultant's Conclusions for Sewer Revenue Requirement

Based on the City's sewer revenue requirement analysis, it is recommended that the overall sewer rate revenue be adjusted by 9.5% annually from 2016 through 2018. It is also proposed

that sewer rates be adjusted by 8.5% in 2019 and by 2.0% in 2020. The proposed adjustments would maintain the utility's ability to fully support the current level of operations and infrastructure replacement, as well as the current and future infrastructure improvements.

2.2 Sewer Cost of Service Analysis

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 utility. This section will discuss the development of the sewer cost of service analysis. A sewer cost of service analysis is concerned with the equitable allocation of the total sewer revenue requirement between the various customer classes of service (e.g., residential, commercial). The previously developed sewer revenue requirement was utilized in the development of the cost of service analysis.

2.2.1 Objectives of a Cost of Service Study

As described in Section 1.2.1, there are two primary objectives in conducting a cost of service study:

1. Equitably allocate the revenue requirement between the customer classes of service
2. Derive average unit costs for subsequent rate designs

The purpose of a sewer cost of service study is to determine the fair and equitable manner to collect the revenue requirement. The second rationale for conducting a sewer cost of service analysis is to ensure a rate is designed such that it properly reflects the costs incurred by the utility. For example, a sewer utility typically incurs costs related to flow, strength, and customer cost components. Each of these types of costs may be collected in a slightly different manner to allow for the development of rates that recover costs in the same manner as they are incurred.

2.2.2 Determining the Customer Classes of Service

The first step in a sewer cost of service study is to determine the customer classes of service. Based on the current rate schedules, the classes of service used within the sewer study 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 groups based upon facility requirement and/or flow characteristics.

2.2.3 General Cost of Service Procedures

A cost of service study utilizes a three-step approach to review costs. These 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.

2.2.3.1 Functionalization of Costs

The first analytical step in the sewer cost of service process is called functionalization. Functionalization is the arrangement of expenses and asset (plant) data by major operating functions within the sewer utility (e.g. treatment, pumping, collection, etc.). Within this study, the functionalization of the sewer cost data was largely accomplished through the sewer utility's system of accounts.

2.2.3.2 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 sewer infrastructure records and revenue requirement analysis were reviewed and allocated using the following cost allocations:

- **Volume:** Volume related costs are those costs which tend to vary with the total quantity of wastewater. An example of a volume related cost is electricity used for pumping wastewater or the sizing of the collection system to meet customer demands.
- **Strength:** 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 (BOD) and total suspended solids (SS). Increased levels of BOD or SS generally equate to increased treatment costs.
- **Customer:** Customer related costs vary with the addition or deletion of a customer. Customer related costs typically include the costs of billing, collecting, and accounting. These costs may also be further categorized as actual or weighted.
- **Revenue:** Some costs associated with the sewer 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.
- **Direct Assignments:** Certain costs associated with operating the utility may be directly traced to a specific customer or class of service. These costs are then "directly assigned" to that specific class of service to assure that other classes of service will not be allocated any portion of costs or facilities from which they do not benefit

2.2.3.3 Development of Distribution Factors

Once the allocation process was complete, and the customer groups have been defined, the various allocated costs were distributed to each customer class of service. The revenue requirement was allocated to the various customer classes of service using the following allocation factors.

- **Volume Allocation Factor:** The volume distribution factor was based on the projected total wastewater flows for each class of service for the projected test period and based on average winter water use for residential customers and all use for commercial/industrial.
- **Strength Allocation Factor:** Strength-related costs are classified between biochemical oxygen demand (BOD) and suspended solids (SS). Both of these types of costs are allocated to the various classes of service based upon the relative estimated strengths that each class of service contributed.

- **Customer Allocation Factor:** Customer costs within the cost of service study are allocated to the various customer classes of service based upon their respective customer counts. The number of customers, by customer class of service, was developed within the revenue requirement study. Two types of customer allocation factors were developed, actual and weighted. Actual customer costs are based on the actual number of accounts for each class of service. The weighted customer allocation factor attempts to reflect the disproportionate costs associated with serving larger customers. These customers are assigned a higher per-customer cost because they may require additional administrative costs and monitoring.
- **Revenue Related Allocation Factor:** The revenue related allocation factor was developed from the projected rate revenues for 2016 for each customer group. These same revenues were used within the revenue requirement analysis previously.

2.2.4 Functionalization and Allocation of Sewer Plant in Service

The next step of the cost of service is the functionalization and allocation of the sewer plant in service. In performing the functionalization of plant in service, HDR utilized the sewer utility's historical asset records. Once the assets were functionalized, the analysis shifted to allocation of the asset. Below in Table 2-3 is a summary of how the sewer plant was allocated.

Table 2 – 3
Summary of the Allocation of Plant in Service

	Volume Related	BOD Related	SS Related	Actual Customer
Collection	0%	0%	0%	100%
Lift Station	100%	0%	0%	0%
Treatment	50%	25%	25%	0%
Land & Buildings	100%	0%	0%	0%

2.2.5 Functionalization and Allocation of Operating Expenses

Operating expenses are generally functionalized and classified in a manner similar to the corresponding plant account. For example, maintenance of collection lines is typically allocated in the same manner (allocation percentages) as the plant account for collection lines. This approach to allocation of operating expenses was used for this analysis. The revenue requirement for 2016 was functionalized, allocated, and distributed. As noted earlier, the cash basis was utilized for the revenue requirement, which was comprised of operation and maintenance expenses, taxes & transfers, debt service, and capital funded from rates.

2.2.6 Major Assumptions of the Cost of Service Study

A number of key assumptions were used within the sewer cost of service study.

- The test period used for the sewer cost of service analysis was 2016. The revenue and expense data was previously developed within the revenue requirement study.
- A cash basis approach was utilized which conforms to generally accepted sewer cost of service approaches and methodologies.

- The allocation of plant in service was developed using the sewer utility's specific data and generally accepted cost allocation techniques.

2.2.7 Summary of the Cost of Service Results

In summary form, this cost of service analysis began by functionalizing the sewer utility's plant asset records and then the sewer revenue requirement (2016 operating expenses). The functionalized plant and expense accounts were then allocated into their various cost components. The individual allocation totals were then distributed to the sewer customer classes of service based upon the appropriate distribution factors. A summary of the detailed sewer cost responsibility developed for each class of service is shown in Table 2 - 4.

Table 2 – 4
Summary of the Sewer Cost of Service Analysis ($000s)

Class of Service	Present Rate Revenues	Allocated Costs	$ Difference	% Difference
Residential	$580	$603	($23)	4.0%
Multi-Family	190	214	(23)	12.4%
Commercial/Industrial	199	245	(46)	22.9%
Total	**$969**	**$1,061**	**($92)**	**9.5%**

The allocation of costs attempted to assure the facilities and costs allocated to each customer class reflected their respective benefit. The sewer cost of service results indicated no cost differences between the customer classes of service. As a note, this cost of service analysis is based on one year's data and customer information, and customer characteristics may change over time resulting in different cost of service cost distributions.

2.2.8 Consultant's Conclusions and Recommendations

As noted in Table 2-4, cost differences apparently exist between the three classes of service. Given this outcome, along with the overall objective of the sewer utility financially standing on its own, it is recommended the overall level of rates be adjusted to collect the revenue requirements over the test period. No cost of service adjustments are proposed at this time and the proposed rate adjustments from the revenue requirement analysis can be applied "across-the-board". As in the water utility cost of service study, this sewer analysis is the first completed by the City. With that in mind, it is not typically advisable to make adjustments based on the results of a single study.

2.3 Sewer Rate Design

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

2.3.1 Present and Proposed Sewer Rates

All sewer customers are charged a flat monthly rate and a variable consumption charge. For residential and multi-family customers, the fixed charge is the same regardless of meter size. For commercial customers, the fixed charge is based on the water meter diameter. All customer classes pay the same uniform volumetric consumption on a per CCF basis. However, it is important to note that residential customers are charged based on the winter water average while commercial customers are charged on all water usage.

Similar to the rate design for the water utility, the sewer rate design provided two alternatives. The first alternative is an "across the board" adjustment. This means that all of the rate components are increased by the rate adjustment. Presented below in Table 2-5 is a summary of the present and proposed sewer rates for all sewer customers for Alternative 1.

Table 2 – 5
Present and Proposed Sewer Rates Alternative 1 – All Customers

	Present Rate	Proposed				
		2015	2016	2017	2018	2019
Fixed Charge	**$/Month**					
Residential	$38.50	$42.16	$46.17	$50.55	$54.85	$55.94
Multi-Family	33.50	36.68	40.16	43.98	47.72	48.67
Commercial						
3/4"	$44.50	$48.73	$53.36	$58.43	$63.40	$64.67
3/4"(Out)	44.50	48.73	53.36	58.43	63.40	64.67
1"	56.00	61.32	67.15	73.53	79.78	81.38
1.5"	127.50	139.61	152.87	167.39	181.62	185.25
2"	183.50	200.93	220.02	240.92	261.40	266.63
3"	340.00	372.30	407.67	446.40	484.34	494.03
4"	510.00	558.45	611.50	669.59	726.51	741.04
10"	1,525.00	1,669.88	1,828.52	2,002.23	2,172.42	2,215.87
Variable Charge	**$/CCF**					
All Consumption [1]	$6.00	$6.57	$7.19	$7.87	$8.54	$8.71

As with the water utility, Alternative 2 aims to increase fixed charge revenue. Currently, the City collects approximately 52% of rate revenues through the fixed charge. Although this is a higher percentage than water, it still leaves vulnerability for large revenue fluctuations. In order to hedge this, Alternative 2 increases the fixed charges and maintains the current volumetric charge. Table 2-6 provides a summary of the Alternative 2 rate design.

Table 2 – 6
Present and Proposed Sewer Rates Alternative 2 – All Customers

	Present Rate	Proposed				
		2015	2016	2017	2018	2019
Fixed Charge	**$/Month**					
Residential	$38.50	$44.66	$51.36	$58.71	$65.93	$67.77
Multi-Family	33.50	39.20	45.43	52.24	58.93	60.64
Commercial						
3/4"	$44.50	$64.75	$86.96	$111.31	$135.24	$141.33
3/4"(Out)	44.50	64.75	86.96	111.31	135.24	141.33
1"	56.00	81.48	109.43	140.07	170.19	177.85
1.5"	127.50	185.51	249.14	318.90	387.46	404.90
2"	183.50	266.99	358.57	458.97	557.65	582.74
3"	340.00	494.70	664.38	850.41	1,033.25	1,079.75
4”	510.00	742.05	996.57	1,275.61	1,549.87	1,619.61
10”	1,525.00	2,218.88	2,979.96	3,814.35	4,634.44	4,842.99
Variable Charge	**$/CCF**					
All Consumption [1]	$6.00	$6.00	$6.00	$6.00	$6.00	$6.00

No cost of service or rate structure change recommendations are proposed for the sewer rates for either Alternative 1 or Alternative 2.

2.4 Summary of the Sewer Rate Study

This completes the analysis for the City’s sewer rate study. The proposed rates were developed using “generally accepted” rate making methods and principles. The proposed adjustments for 2016 through 2020 are necessary given the results of the revenue requirement analysis. Adoption of the proposed sewer rates will provide adequate funding for the sewer utility over the planning period, and position the utility for anticipated future capital needs. The City should revisit the rates annually to test their ability to cover expenses and maintain financial metrics.

Technical Appendices

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

	Budgeted	Projected				
	2015[a]	**2016**	**2017**	**2018**	**2019**	**2020**
Revenues						
Water Rates	$1,319,563	$1,332,759	$1,349,550	$1,369,794	$1,390,340	$1,411,196
Miscellaneous Revenues	6,100	6,573	6,674	6,781	7,856	9,734
Total Revenues	**$1,325,663**	**$1,339,332**	**$1,356,224**	**$1,376,574**	**$1,398,197**	**$1,420,929**
Expenses						
Total Operations & Maintenance	$725,800	$746,712	$768,243	$790,414	$813,244	$836,751
Total Operations & Maintenance	**$725,800**	**$746,712**	**$768,243**	**$790,414**	**$813,244**	**$836,751**
Rate Funded Capital	**$0**	**$165,000**	**$180,000**	**$200,000**	**$225,000**	**$255,000**
Taxes & Transfers	**$202,651**	**$237,361**	**$243,273**	**$249,510**	**$255,918**	**$262,501**
Net Debt Service	**$225,000**	**$225,000**	**$225,000**	**$225,000**	**$225,000**	**$225,000**
Change in Working Capital	**$172,212**	**$18,569**	**$21,760**	**$23,995**	**$23,153**	**$19,105**
Total Revenue Requirement	**$1,325,663**	**$1,392,642**	**$1,438,277**	**$1,488,919**	**$1,542,314**	**$1,598,358**
Balance/(Deficiency) of Funds	**$0**	**($53,310)**	**($82,053)**	**($112,345)**	**($144,118)**	**($177,429)**
Balance as a % of Rate Adj. Req'd	**0.0%**	**4.0%**	**6.1%**	**8.2%**	**10.4%**	**12.6%**
Proposed Rate Adjustment	**0.0%**	**4.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**
Add'l Revenue with Rate Adj.	**$0**	**$53,310**	**$82,053**	**$112,345**	**$144,118**	**$177,429**
Bal./(Def.) After Rate Ad.	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Debt Service Coverage Ratio (all debt)						
Before Rate Adjustment	2.34	2.31	2.28	2.27	2.25	2.24
After Proposed Rate Adjustment	2.34	2.54	2.65	2.77	2.89	3.03
Average Residential Customer Bill	(Current rates; 3/4" meter + 6 CCF)					
Customer Bill after Rate Adj. Proposed	$20.90	$21.74	$22.17	$22.61	$23.07	$23.53
Bill Difference - Monthly	0.00	0.84	0.43	0.44	0.45	0.46
Cumulative Bill Difference	0.00	0.84	1.27	1.71	2.17	2.63
Fund 401 - Operating Fund	$247,434	$266,003	$287,764	$311,759	$334,912	$354,017
Fund 408 - WATER SYSTEM IMPROVEMENT RESERV	480,238	480,931	418,529	428,594	325,031	399,194
Fund 410 - PUBLIC WORKS EQUIPMENT RESERVE	35,045	68,238	102,491	137,836	174,774	213,951
Total Reserve Funds	***$762,717***	***$815,172***	***$808,784***	***$878,189***	***$834,717***	***$967,163***

[a] Budgeted revenues in 2015 are $1,239,000 (7/7/15 email from City).

City of Kalama
Water Utility Rate Study
Excalations
Exhibit 2

	Budgeted	Projected					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	*Notes:*
Revenues:							
Residential - Customer Growth	1.0%	1.0%	1.0%	1.5%	1.5%	1.5%	
Commerical - Customer Growth	1.0%	1.0%	1.5%	1.5%	1.5%	1.5%	
All - Customer Growth	1.0%	1.0%	1.0%	1.5%	1.5%	1.5%	
Consumption Growth	0.0%	0.0%	0.0%	0.5%	0.5%	0.5%	
Miscellaneous Revenues	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses:							
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	
Medical Benefits	Budget	6.0%	6.0%	6.0%	6.0%	6.0%	
Materials & Supplies	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Equipment	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Miscellaneous	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Utilities	Budget	3.5%	3.5%	3.5%	3.5%	3.5%	
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
No Escalation	N/A	N/A	N/A	N/A	N/A	N/A	
Insurance	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Interest:	0.2%	0.2%	0.2%	0.2%	0.5%	1.0%	
New Debt Service:							
Low Interest Loans							
Term in Years	20	20	20	20	20	20	
Rate	2.0%	2.0%	2.0%	2.5%	2.5%	2.5%	
Revenue Bond							
Term in Years	20	20	20	20	20	20	
Rate	5.0%	5.0%	5.0%	5.5%	5.5%	6.0%	

City of Kalama
Water Utility Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	Projected					
	2015[a]	2016	2017	2018	2019	2020	*Notes:*
Revenues							
Water Rates							
Residential - Inside	$186,524	$188,389	$190,273	$193,127	$196,024	$198,964	As Residential - Customer Growth
Residential - Outside	371,497	375,212	378,964	384,649	390,418	396,275	As Residential - Customer Growth
Low Income - Inside	6,025	6,085	6,146	6,238	6,331	6,426	As Residential - Customer Growth
Low Income - Outside	7,175	7,247	7,319	7,429	7,540	7,653	As Residential - Customer Growth
Multi-Family - Inside	51,084	51,595	52,111	52,892	53,686	54,491	As Residential - Customer Growth
Multi-Family - Outside	11,304	11,417	11,531	11,704	11,880	12,058	As Residential - Customer Growth
Com/Ind - Inside	95,696	96,653	98,102	99,574	101,067	102,583	As Commerical - Customer Growth
Com/Ind - Outside	420,937	425,146	431,523	437,996	444,566	451,235	As Commerical - Customer Growth
10" Com/Ind - Outside	169,323	171,016	173,581	176,185	178,828	181,510	As Commerical - Customer Growth
Total Rate Revenues	$1,319,563	$1,332,759	$1,349,550	$1,369,794	$1,390,340	$1,411,196	
Other Revenues:							
Other Misc. Revenue	$1,500	$1,515	$1,530	$1,545	$1,561	$1,577	As Miscellaneous Revenues
Water - Other Sales Tax Collection	1,000	1,010	1,020	1,030	1,041	1,051	As Miscellaneous Revenues
Hydrant Permit Meter Deposits	2,000	2,020	2,040	2,061	2,081	2,102	As Miscellaneous Revenues
Engineering Serv-Reimbursement	1,500	1,515	1,530	1,545	1,561	1,577	As Miscellaneous Revenues
Earned Interest in Operating Fund	100	513	553	599	1,613	3,428	Calculated
Total Other Revenues	$6,100	$6,573	$6,674	$6,781	$7,856	$9,734	
Total Revenues	**$1,325,663**	**$1,339,332**	**$1,356,224**	**$1,376,574**	**$1,398,197**	**$1,420,929**	

[a] Budgeted revenues in 2015 are $1,239,000 (7/7/15 email from City).

City of Kalama
Water Utility Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	Projected					
	2015[a]	2016	2017	2018	2019	2020	*Notes:*
Expenses							
Operations & Maintenance							
Salaries - Admin.-General	$64,000	$65,920	$67,898	$69,935	$72,033	$74,194	As Salary
Benefits - Admin.	29,500	30,090	30,692	31,306	31,932	32,570	As Benefits
Supplies	1,000	1,030	1,061	1,093	1,126	1,159	As Materials & Supplies
Travel - Administrative	500	505	510	515	520	526	As Miscellaneous
Equipment Maintenance - Admin	6,600	6,798	7,002	7,212	7,428	7,651	As Equipment
Miscellaneous	2,500	2,525	2,550	2,576	2,602	2,628	As Miscellaneous
Legal Services - Retainer, Etc	0	0	0	0	0	0	As Salary
Salaries - Water/maintenance	120,000	123,600	127,308	131,127	135,061	139,113	As Salary
Overtime Earnings - Maint.	12,000	12,360	12,731	13,113	13,506	13,911	As Salary
Regular Benefits	60,000	61,200	62,424	63,672	64,946	66,245	As Benefits
Uniforms	1,500	1,545	1,591	1,639	1,688	1,739	As Materials & Supplies
Operating Supplies	32,000	32,960	33,949	34,967	36,016	37,097	As Materials & Supplies
Fuel Consumed	11,000	11,385	11,783	12,196	12,623	13,065	As Utilities
Inventory - Meters/Pipe/Fittings	35,000	36,050	37,132	38,245	39,393	40,575	As Materials & Supplies
Small Tools & Minor Equipment	2,500	2,575	2,652	2,732	2,814	2,898	As Materials & Supplies
Equipment Rental - Maint.	1,000	1,030	1,061	1,093	1,126	1,159	As Equipment
Repairs & Mtce. - Contracted	12,000	12,360	12,731	13,113	13,506	13,911	As Equipment
Equipment Maintenance - Maint.	5,000	5,150	5,305	5,464	5,628	5,796	As Equipment
Vehicle Maintenance	7,000	7,210	7,426	7,649	7,879	8,115	As Equipment
Salaries - Water/operations	57,600	59,328	61,108	62,941	64,829	66,774	As Salary
Overtime Earnings - Oper.	22,000	22,660	23,340	24,040	24,761	25,504	As Salary
Benefits - Oper.	34,000	34,680	35,374	36,081	36,803	37,539	As Benefits
Operating Supplies-Chemicals	50,000	51,500	53,045	54,636	56,275	57,964	As Materials & Supplies
Other Professional Services	6,000	6,180	6,365	6,556	6,753	6,956	As Salary
Electricity	95,000	98,325	101,766	105,328	109,015	112,830	As Utilities
Repairs & Maintenance	8,000	8,240	8,487	8,742	9,004	9,274	As Equipment
Intergovernmental Professional Services	6,000	6,180	6,365	6,556	6,753	6,956	As Salary
Salaries-Facilities/shop	1,200	1,236	1,273	1,311	1,351	1,391	As Salary
ON Call Pay	8,400	8,652	8,912	9,179	9,454	9,738	As Salary
Undistributed Benefits	2,500	2,550	2,601	2,653	2,706	2,760	As Benefits
Office Computer Supplies	500	515	530	546	563	580	As Materials & Supplies
Office & Oper. Supplies	500	515	530	546	563	580	As Materials & Supplies
Engineering	4,000	4,120	4,244	4,371	4,502	4,637	As Salary
Communications	12,000	12,360	12,731	13,113	13,506	13,911	As Salary
Travel	1,000	1,010	1,020	1,030	1,041	1,051	As Miscellaneous
Utilities	7,500	7,763	8,034	8,315	8,606	8,908	As Utilities
Shop Maintenance	1,000	1,010	1,020	1,030	1,041	1,051	As Miscellaneous
Miscellaneous & Training	3,500	3,535	3,570	3,606	3,642	3,679	As Miscellaneous
Hydrant Permit Meter Deposits	2,000	2,060	2,122	2,185	2,251	2,319	As Materials & Supplies
Total Operations & Maintenance	$725,800	$746,712	$768,243	$790,414	$813,244	$836,751	

City of Kalama
Water Utility Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	Projected					
	2015[a]	2016	2017	2018	2019	2020	*Notes:*
Rate Funded Capital	**$0**	**$165,000**	**$180,000**	**$200,000**	**$225,000**	**$255,000**	Est. '14 Depreciation = $350,000
Taxes & Transfers							
Accounting Service Fees	$83,000	$85,490	$88,055	$90,696	$93,417	$96,220	As Salary
Trsf. TO 410 Equip Rsve PW	3,000	3,090	3,183	3,278	3,377	3,478	As Equipment
new Trsf. TO 410 Equip Rsve - WTP Equip. Repl.	0	6,000	6,180	6,365	6,556	6,753	As Equipment
new Trsf. To 410 Equip. Reserv - Meter Repl.	0	24,000	24,720	25,462	26,225	27,012	As Equipment
Transfer - Benefit Reserve 107	4,000	4,080	4,162	4,245	4,330	4,416	As Benefits
Transfer TO Audit #115	2,000	2,060	2,122	2,185	2,251	2,319	As Salary
Transfer Out TO 115-Insurance	44,200	45,526	46,892	48,299	49,747	51,240	As Insurance
State Taxes	66,451	67,115	67,961	68,980	70,014	71,064	5.029% + 1.5%
Total Taxes & Transfers	**$202,651**	**$237,361**	**$243,273**	**$249,510**	**$255,918**	**$262,501**	
Debt Service							
PWTF/1995 CLOVERDALE RESERVOIRS	$8,823	$0	$0	$0	$0	$0	From Debt Schedule
PWTF/2001 H20 TREATMENT PLT CONST.	225,139	224,052	222,964	221,876	220,789	219,157	From Debt Schedule (retires 2022)
Additional SRF Loans	0	28,085	28,085	28,085	28,085	28,085	Calculated @ 2% for 20 yrs
Additional Revenue Bonds	0	0	0	0	0	0	Calculated @ 5% for 20 yrs
Total Debt Service	$233,962	$252,137	$251,049	$249,961	$248,874	$247,242	
Less Other Funding	$8,962	$27,137	$26,049	$24,961	$23,874	$22,242	
Net Debt Service	**$225,000**	**$225,000**	**$225,000**	**$225,000**	**$225,000**	**$225,000**	
Change in Working Capital	**$172,212**	**$18,569**	**$21,760**	**$23,995**	**$23,153**	**$19,105**	
Total Revenue Requirement	**$1,325,663**	**$1,392,642**	**$1,438,277**	**$1,488,919**	**$1,542,314**	**$1,598,358**	
Balance/(Deficiency) of Funds	**$0**	**($53,310)**	**($82,053)**	**($112,345)**	**($144,118)**	**($177,429)**	
Balance as a % of Rate Adj. Req'd	**0.0%**	**4.0%**	**6.1%**	**8.2%**	**10.4%**	**12.6%**	
Proposed Rate Adjustment	**0.0%**	**4.0%**	**2.0%**	**2.0%**	**2.0%**	**2.0%**	
Add'l Revenue with Rate Adj.	**$0**	**$53,310**	**$82,053**	**$112,345**	**$144,118**	**$177,429**	
Bal./(Def.) After Rate Ad.	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

City of Kalama
Water Utility Rate Study
Revenue Requirement
Exhibit 3

	Budgeted	Projected					
	2015[a]	2016	2017	2018	2019	2020	*Notes:*
Average Residential Customer Bill	(Current rates; 3/4" meter + 6 CCF)						
Customer Bill after Rate Adj. Proposed	$20.90	$21.74	$22.17	$22.61	$23.07	$23.53	
Bill Difference - Monthly		0.84	0.43	0.44	0.45	0.46	
Cumulative Bill Difference		0.84	1.27	1.71	2.17	2.63	
Debt Service Coverage Ratio (all debt)							
Before Rate Adjustment	2.34	2.31	2.28	2.27	2.25	2.24	
After Proposed Rate Adjustment	2.34	2.54	2.65	2.77	2.89	3.03	
Fund 401 - Operating Fund							
Beginning Balance	$75,000	$247,434	$266,003	$287,764	$311,759	$334,912	
Plus: Revenue	1,325,563	1,392,129	1,437,724	1,488,320	1,540,702	1,594,930	
Plus: Connection Fees	80,000	87,870	88,749	90,080	91,431	92,803	As All - Customer Growth
Interest Earnings	322	513	553	599	1,613	3,428	
Less: Expenses	(725,800)	(746,712)	(768,243)	(790,414)	(813,244)	(836,751)	
Less: Rate-Funded Capital	0	(165,000)	(180,000)	(200,000)	(225,000)	(255,000)	
Less: Taxes & Transfers	(202,651)	(237,361)	(243,273)	(249,510)	(255,918)	(262,501)	
Less: Connection Fees	(80,000)	(87,870)	(88,749)	(90,080)	(91,431)	(92,803)	
Less: Transfer to 408 for Debt Service	(225,000)	(225,000)	(225,000)	(225,000)	(225,000)	(225,000)	
Ending Balance	$247,434	$266,003	$287,764	$311,759	$334,912	$354,017	
Target Minimum Fund Bal. - 90 days O&M	*$179,000*	*$184,000*	*$189,000*	*$195,000*	*$201,000*	*$206,000*	
Fund 408 - WATER SYSTEM IMPROVEMENT RESERVE							
Beginning Balance [1]	$313,000	$480,238	$480,931	$418,529	$428,594	$325,031	
Plus: Loan repayment w/ interest	275,000	0	0	0	0	0	
Plus: Connection Fees	80,000	87,870	88,749	90,080	91,431	92,803	
Plus: Transfer from 401 for Debt Service	225,000	225,000	225,000	225,000	225,000	225,000	
Interest Earnings	1,200	960	899	846	1,879	3,603	
Less: Debt Service	(233,962)	(252,137)	(251,049)	(249,961)	(248,874)	(247,242)	
Less: Capital Projects (Net of Rate-Funded Capital)	(180,000)	(61,000)	(126,000)	(55,900)	(173,000)	0	
Ending Balance	$480,238	$480,931	$418,529	$428,594	$325,031	$399,194	
Target Minimum Fund Bal. - Depreciation Expense	$300,000	$310,000	$320,000	$330,000	$340,000	$350,000	Escalate 3% per year
Combined Target Ending Fund Balance	*$479,000*	*$494,000*	*$509,000*	*$525,000*	*$541,000*	*$556,000*	
Reserve Balance for O&M and Capital	***$727,672***	***$746,935***	***$706,293***	***$740,353***	***$659,943***	***$753,212***	
Balance/Deficiency to Targets	*$248,672*	*$252,935*	*$197,293*	*$215,353*	*$118,943*	*$197,212*	
Fund 410 - PUBLIC WORKS EQUIPMENT RESERVE							
Beginning Balance	$31,978	$35,045	$68,238	$102,491	$137,836	$174,774	
Plus: Additions	3,000	3,090	3,183	3,278	3,377	3,478	
Plus: Transfer for WTP Equipment	0	6,000	6,180	6,365	6,556	6,753	
Plus: Transfer for Meter Replacement	0	24,000	24,720	25,462	26,225	27,012	
Interest	67	103	171	240	780	1,934	
Less: Capital Project Funding	0	0	0	0	0	0	
Ending Balance	$35,045	$68,238	$102,491	$137,836	$174,774	$213,951	
Total Reserve Funds	***$762,717***	***$815,172***	***$808,784***	***$878,189***	***$834,717***	***$967,163***	

City of Kalama
Water Utility Rate Study
Capital Improvement Plan
Exhibit 4

Capital Improvement Projects	2015a	2016	2017	2018	2019	2020	Total	2021-2035	Notes:
Funded Projects									
Upgrade Water meters (Radio Read)	$100,000	$0	$0	$0	$0	$0	$100,000	$0	
Water/Sewer Rate Study (50%)	15,000	0	0	0	0	0	15,000	0	
Update Water System Plan	40,000	0	0	0	0	0	40,000	0	
Water Line Replacements	15,000	0	0	0	0	0	15,000	0	
Water Plant Turbidity Sensors	10,000	0	0	0	0	0	10,000	0	
WTP Software	0	40,000	0	0	0	0	40,000	0	
Simmons Road Booster Station Replacement	0	0	0	255,900	0	0	255,900	0	
Lower Green Mountain Reservoir Replacement and new Agate Mt BPS	0	0	0	0	0	604,000	604,000	0	
South Port to Todd Road Water Main	0	536,000	0	0	0	0	536,000	0	
Simmons Reservoir Replacement Project	0	0	0	0	398,000	0	398,000	0	
Old Pacific Highway Water Main	0	0	306,000	0	0	0	306,000	0	
3rd Street Water Main Replacement(2)	0	0	0	0	0	0	0	125,100	
Abandon Rainbow Park Waterline	0	0	0	0	0	0	0	6,000	
Hendrickson Road Waterline(3)	0	0	0	0	0	0	0	1,461,000	
Central Port Water Main Replacement(3)	0	0	0	0	0	0	0	427,100	
Ivy Street Water Main Replacement(2)	0	0	0	0	0	0	0	65,800	
Kilkelly Road Water Main Replacement	0	0	0	0	0	0	0	307,400	
Military Road to School Waterline Replacement	0	0	0	0	0	0	0	215,100	
1.0 MG Reservoir Replacement	0	0	0	0	0	0	0	2,460,000	
Upper Gore Reservoir Replacement	0	0	0	0	0	0	0	405,000	
Upper Gore Booster Pump Station Replacement	0	0	0	0	0	0	0	277,200	
Fire Hydrant Replacement	0	0	0	0	0	0	0	21,000	
Fir Street Water Main Replacement	0	0	0	0	0	0	0	177,600	
Gore Road Waterline Replacement	0	0	0	0	0	0	0	716,900	
Old Pacific Highway Waterline Replacement	0	0	0	0	0	0	0	720,900	
China Garden/Simmons Road Waterline Replacement	0	0	0	0	0	0	0	671,700	
East Frontage Road Waterline Replacement	0	0	0	0	0	0	0	141,000	
Lower Gore Reservoir Replacement	0	0	0	0	0	0	0	405,000	
Additional Agate Mountain Reservoir	0	0	0	0	0	0	0	383,000	
Additional Vivian Reservoir.	0	0	0	0	0	0	0	300,000	
Cemetery Road Reservoir Improvements.	0	0	0	0	0	0	0	33,900	
Lower Gore Booster Station Replacement	0	0	0	0	0	0	0	298,500	
Jaeger Booster Station Replacement	0	0	0	0	0	0	0	298,500	
Modrow Road to Westview Drive Water Main Replacement	0	0	0	0	0	0	0	372,000	
Lower Green Mountain Booster Station	0	0	0	0	0	0	0	298,500	
Total	$180,000	$576,000	$306,000	$255,900	$398,000	$604,000	$2,319,900	$10,588,200	
Unidentified Future Capital Projects	$0	$0	$0	$0	$0	$73,800	$73,800		
Transfer to Cash Reserve	$0	$0	$0	$0	$0	$0	$0		
Total Capital Improvement Projects	**$180,000**	**$576,000**	**$306,000**	**$255,900**	**$398,000**	**$677,800**	**$2,393,700**		
Less: Outside Funding Sources									
Fund 408 - Water Sys Improv. Reserve	$180,000	$61,000	$126,000	$55,900	$173,000	$0	$595,900		
Fund 410 - Public Works Equipment Reserve	0	0	0	0	0	0	0		
Developer Funded	0	0	0	0	0	422,800	422,800		
Low Interest Loans	0	0	0	0	0	0	0		
Assumed New Low Interest Loan	0	350,000	0	0	0	0	350,000		
Additional Revenue Bonds	0	0	0	0	0	0	0		
Total Funding Sources	**$180,000**	**$411,000**	**$126,000**	**$55,900**	**$173,000**	**$422,800**	**$1,368,700**		
Rate Funded Capital	**$0**	**$165,000**	**$180,000**	**$200,000**	**$225,000**	**$255,000**	**$1,025,000**		

City of Kalama
Water Utility Rate Study
Debt Schedule
Exhibit 5

	2014	2015	2016	2017	2018	2019	2020	*Total*
PWTF/1995 CLOVERDALE RESERVOIRS-408 (1%)								
Payment Amount	$8,950	$8,823	$0	$0	$0	$0	$0	$17,773
PWTF/2001 H20 TREATMENT PLT CONST. (.5%)								
Payment Amount	$226,300	$225,139	$224,052	$222,964	$221,876	$220,789	$219,157	$1,560,278
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	$235,250	$233,962	$224,052	$222,964	$221,876	$220,789	$219,157	**$1,578,051**

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Residential - Inside														
Meter Charge														
Bi-Monthly														
3/4"	$19.00	770		770		770		770		770		770		770
1"	$0.00	1		1		1		1		1		1		1
Monthly														
3/4"	$9.50	4	4	4	4	4	4	4	4	4	4	4	4	8
1"		0	0	0	0	0	0	0	0	0	0	0	0	0
		775	4	775	4	775	4	775	4	775	4	775	4	779
Volume Charge	**$/CCF**													
All Usage	$1.70	6,256	553	7,376	604	6,449	764	11,338	183	10,830	26	6,601	692	51,670
		6,256	553	7,376	604	6,449	764	11,338	183	10,830	26	6,601	692	51,670
Revenues														
Meter Charge		$14,668	$38	$14,668	$38	$14,668	$38	$14,668	$38	$14,668	$38	$14,668	$38	$88,236
Water Volume Charge		10,635	940	12,539	1,027	10,962	1,299	19,274	311	18,410	44	11,221	1,176	87,840
Total Residential - Inside Revenues		$25,303	$978	$27,207	$1,065	$25,630	$1,337	$33,942	$349	$33,078	$82	$25,889	$1,214	$176,076
Residential - Outside														
Meter Charge														
Bi-Monthly														
3/4"	$35.15		750		750		750		750		750		750	750
1"	$0.00		4		4		4		4		4		4	4
		0	754	0	754	0	754	0	754	0	754	0	754	754
Volume Charge	**$/CCF**													
All Usage	$3.15	85	8,266	69	7,405	68	10,016	78	16,792	154	9,303	37	8,178	60,449
		85	8,266	69	7,405	68	10,016	78	16,792	154	9,303	37	8,178	60,449
Revenues														
Meter Charge		$0	$26,363	$0	$26,363	$0	$26,363	$0	$26,363	$0	$26,363	$0	$26,363	$158,175
Volume Charge		266	25,997	216	23,288	213	31,500	246	52,809	483	29,256	117	25,720	190,112
Total Residential - Outside Revenues		$266	$52,359	$216	$49,650	$213	$57,862	$246	$79,172	$483	$55,619	$117	$52,083	$348,287

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Low Income - Inside														
Meter Charge														
Bi-Monthly														
Low Income Rate	$7.50	4		4		4		4		4		4		4
		4	0	4	0	4	0	4	0	4	0	4	0	4
Volume Charge	**$/CCF**													
All Usage	$1.70	431	93	475	105	475	121	523	101	448	95	437	134	3,438
		431	93	475	105	475	121	523	101	448	95	437	134	3,438
Revenues														
Meter Charge		$30		$30		$30		$30		$30		$30		$180
Water Volume Charge		733	158	807	178	807	206	889	171	762	161	743	228	5,845
Total Low Income - Inside Revenues		$763	$158	$837	$178	$837	$206	$919	$171	$792	$161	$773	$228	$6,025
Low Income - Outside														
Meter Charge														
Bi-Monthly														
Low Income Rate	$13.88		25		25		25		25		25		25	25
		0	25	0	25	0	25	0	25	0	25	0	25	25
Volume Charge	**$/CCF**													
All Usage	$3.15	0	232	0	235	0	262	0	397	0	226	0	267	1,619
		0	232	0	235	0	262	0	397	0	226	0	267	1,619
Revenues														
Meter Charge			$347		$347		$347		$347		$347		$347	$2,082
Volume Charge		0	729	0	740	0	825	0	1,249	0	711	0	839	5,093
Total Low Income - Outside Revenues		$0	$1,076	$0	$1,087	$0	$1,172	$0	$1,596	$0	$1,058	$0	$1,186	$7,175

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Multi-Family - Inside														
Meter Charge														
Bi-Monthly														
3/4" [Multi]	$30.00	20		20		20		20		20		20		20
1" [Multi/Other]	50.00	19		19		19		19		19		19		19
2"	160.00	0		0		0		0		0		0		0
Monthly														
3/4" [Multi]	$15.00	6	6	6	6	6	6	6	6	6	6	6	6	6
1" [Multi/Other]	25.00	7	7	7	7	7	7	7	7	7	7	7	7	7
2"	80.00	1	1	1	1	1	1	1	1	1	1	1	1	1
		53	14	53	14	53	14	53	14	53	14	53	14	53
Volume Charge	**$/CCF**													
All Usage	$1.70	2,206	1,636	2,319	903	2,205	1,042	2,344	935	2,071	869	2,117	1,164	19,813
		2,206	1,636	2,319	903	2,205	1,042	2,344	935	2,071	869	2,117	1,164	19,813
Revenues														
Meter Charge		$1,895	$345	$1,895	$345	$1,895	$345	$1,895	$345	$1,895	$345	$1,895	$345	$13,440
Water Volume Charge		3,751	2,781	3,942	1,535	3,749	1,772	3,985	1,590	3,520	1,478	3,599	1,978	33,681
Total Multi-Family - Inside Revenues		$5,646	$3,126	$5,837	$1,880	$5,644	$2,117	$5,880	$1,935	$5,415	$1,823	$5,494	$2,323	$47,121
Multi-Family - Outside														
Meter Charge														
Bi-Monthly														
3/4" [Multi]	$55.50		10		10		10		10		10		10	10
1" [Multi/Other]	92.50		2		2		2		2		2		2	2
		0	12	0	12	0	12	0	12	0	12	0	12	12
Volume Charge	**$/CCF**													
All Usage	$3.15	0	280	0	274	0	351	0	364	0	297	0	388	1,953
		0	280	0	274	0	351	0	364	0	297	0	388	1,953
Revenues														
Meter Charge		$0	$740	$0	$740	$0	$740	$0	$740	$0	$740	$0	$740	$4,440
Volume Charge		0	879	0	860	0	1,103	0	1,144	0	935	0	1,219	$6,141
Total Multi-Family - Outside Revenues		$0	$1,619	$0	$1,600	$0	$1,843	$0	$1,884	$0	$1,675	$0	$1,959	$10,581

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Com/Ind - Inside														
Meter Charge														
Bi-Monthly														
3/4"	$23.00	2		2		2		2		2		2		2
1"	29.00	0		0		0		0		0		0		0
1.5"	136.00	0		0		0		0		0		0		0
2"	230.00	0		0		0		0		0		0		0
3"	350.00	0		0		0		0		0		0		0
4"	470.00	0		0		0		0		0		0		0
Monthly														
3/4"	$11.50	55	55	55	55	55	55	55	55	55	55	55	55	55
1"	14.50	17	17	17	17	17	17	17	17	17	17	17	17	17
1.5"	68.00	4	4	4	4	4	4	4	4	4	4	4	4	4
2"	115.00	5	5	5	5	5	5	5	5	5	5	5	5	5
3"	175.00	3	3	3	3	3	3	3	3	3	3	3	3	3
4"	235.00	0	0	0	0	0	0	0	0	0	0	0	0	0
		86	84	86	84	86	84	86	84	86	84	86	84	86
Volume Charge	**$/CCF**													
All Usage	$1.70	1,395	1,506	1,255	1,394	2,641	1,994	3,349	4,302	3,239	1,891	1,466	1,574	26,006
		1,395	1,506	1,255	1,394	2,641	1,994	3,349	4,302	3,239	1,891	1,466	1,574	26,006
Revenues														
Meter Charge		$2,297	$2,251	$2,297	$2,251	$2,297	$2,251	$2,297	$2,251	$2,297	$2,251	$2,297	$2,251	$27,288
Volume Charge		2,372	2,560	2,134	2,369	4,489	3,390	5,694	7,313	5,507	3,215	2,492	2,676	44,211
Total Com/Ind (Inside) Revenues		$4,669	$4,811	$4,431	$4,620	$6,786	$5,641	$7,991	$9,564	$7,804	$5,466	$4,789	$4,927	$71,499
Com/Ind - Outside														
Meter Charge														
Bi-Monthly														
3/4"	$34.50		1		1		1		1		1		1	1
1"	43.50		0		0		0		0		0		0	0
1.5"	204.00		0		0		0		0		0		0	0
2"	345.00		0		0		0		0		0		0	0
3"	525.00		0		0		0		0		0		0	0
4"	705.00		0		0		0		0		0		0	0
Monthly														
3/4"	$17.25	11	11	11	11	11	11	11	11	11	11	11	11	11
1"	21.75	9	9	9	9	9	9	9	9	9	9	9	9	9
1.5"	102.00	1	1	1	1	1	1	1	1	1	1	1	1	1
2"	172.50	8	8	8	8	8	8	8	8	8	8	8	8	8
3"	262.50	6	6	6	6	6	6	6	6	6	6	6	6	6
4"	352.50	3	3	3	3	3	3	3	3	3	3	3	3	3
		38	39	38	39	38	39	38	39	38	39	38	39	39
Volume Charge	**$/CCF**													
All Usage	$2.55	6,727	8,892	6,597	7,040	10,398	7,087	15,375	33,767	7,586	8,524	8,019	8,665	128,677
		6,727	8,892	6,597	7,040	10,398	7,087	15,375	33,767	7,586	8,524	8,019	8,665	128,677
Revenues														
Meter Charge		$4,500	$4,535	$4,500	$4,535	$4,500	$4,535	$4,500	$4,535	$4,500	$4,535	$4,500	$4,535	$54,207
Volume Charge		17,154	22,674	16,823	17,952	26,516	18,073	39,205	86,106	19,343	21,736	20,449	22,095	328,127
Total Com/Ind (Inside) Revenues		$21,654	$27,208	$21,323	$22,487	$31,016	$22,607	$43,705	$90,640	$23,843	$26,270	$24,949	$26,630	$382,334

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
10" Com/Ind - Outside														
Meter Charge														
10"	$700.00	1	1	1	1	1	1	1	1	1	1	1	1	1
		1	1	1	1	1	1	1	1	1	1	1	1	1
Volume Charge	**$/CCF**													
0 - 3,500	$2.55	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,500	3,280	41,780
3,501 - 20,000	2.10	1,102	1,925	887	2,788	1,190	749	4,324	1,456	1,791	1,034	2,683	0	19,928
		4,602	5,425	4,387	6,288	4,690	4,249	7,824	4,956	5,291	4,534	6,183	3,280	61,708
Revenues														
Meter Charge		$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$700	$8,400
Volume Charge		11,238	12,968	10,787	14,779	11,424	10,498	18,006	11,982	12,686	11,097	14,560	8,365	148,389
Total Com/Ind (Inside) Revenues		$11,938	$13,668	$11,487	$15,479	$12,124	$11,198	$18,706	$12,682	$13,386	$11,797	$15,260	$9,065	$156,789

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Summary													
Number of Accounts													
Residential - Inside	775	4	775	4	775	4	775	4	775	4	775	4	779
Residential - Outside	0	754	0	754	0	754	0	754	0	754	0	754	754
Low Income - Inside	4	0	4	0	4	0	4	0	4	0	4	0	4
Low Income - Outside	0	25	0	25	0	25	0	25	0	25	0	25	25
Multi-Family - Inside	53	14	53	14	53	14	53	14	53	14	53	14	53
Multi-Family - Outside	0	12	0	12	0	12	0	12	0	12	0	12	12
Com/Ind - Inside	86	84	86	84	86	84	86	84	86	84	86	84	86
Com/Ind - Outside	38	39	38	39	38	39	38	39	38	39	38	39	39
10" Com/Ind - Outside	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Number of Accounts	957	933	957	933	957	933	957	933	957	933	957	933	1,753
Consumption (CCF)													
Residential - Inside	6,256	553	7,376	604	6,449	764	11,338	183	10,830	26	6,601	692	51,670
Residential - Outside	85	8,266	69	7,405	68	10,016	78	16,792	154	9,303	37	8,178	60,449
Low Income - Inside	431	93	475	105	475	121	523	101	448	95	437	134	3,438
Low Income - Outside	0	232	0	235	0	262	0	397	0	226	0	267	1,619
Multi-Family - Inside	2,206	1,636	2,319	903	2,205	1,042	2,344	935	2,071	869	2,117	1,164	19,813
Multi-Family - Outside	0	280	0	274	0	351	0	364	0	297	0	388	1,953
Com/Ind - Inside	1,395	1,506	1,255	1,394	2,641	1,994	3,349	4,302	3,239	1,891	1,466	1,574	26,006
Com/Ind - Outside	6,727	8,892	6,597	7,040	10,398	7,087	15,375	33,767	7,586	8,524	8,019	8,665	128,677
10" Com/Ind - Outside	4,602	5,425	4,387	6,288	4,690	4,249	7,824	4,956	5,291	4,534	6,183	3,280	61,708
Total Consumption	21,702	26,883	22,478	24,248	26,925	25,887	40,832	61,795	29,618	25,765	24,861	24,341	355,334
Revenues													
Residential - Inside	$25,303	$978	$27,207	$1,065	$25,630	$1,337	$33,942	$349	$33,078	$82	$25,889	$1,214	$176,076
Residential - Outside	266	52,359	216	49,650	213	57,862	246	79,172	483	55,619	117	52,083	348,287
Low Income - Inside	763	158	837	178	837	206	919	171	792	161	773	228	6,025
Low Income - Outside	0	1,076	0	1,087	0	1,172	0	1,596	0	1,058	0	1,186	7,175
Multi-Family - Inside	5,646	3,126	5,837	1,880	5,644	2,117	5,880	1,935	5,415	1,823	5,494	2,323	47,121
Multi-Family - Outside	0	1,619	0	1,600	0	1,843	0	1,884	0	1,675	0	1,959	10,581
Com/Ind - Inside	4,669	4,811	4,431	4,620	6,786	5,641	7,991	9,564	7,804	5,466	4,789	4,927	71,499
Com/Ind - Outside	21,654	27,208	21,323	22,487	31,016	22,607	43,705	90,640	23,843	26,270	24,949	26,630	382,334
10" Com/Ind - Outside	11,938	13,668	11,487	15,479	12,124	11,198	18,706	12,682	13,386	11,797	15,260	9,065	156,789
Total Revenues	$70,240	$105,005	$71,339	$98,048	$82,250	$103,984	$111,390	$197,992	$84,801	$103,951	$77,271	$99,614	$1,205,886

2014 Actual $1,191,272
Difference *$14,614*
1.23%

City of Kalama
Water Utility Rate Study
Revenues at Present Rates - 2015 Rates
Exhibit 6b

	Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Summary													
Number of Accounts													
Residential - Inside	775	4	775	4	775	4	775	4	775	4	775	4	775
Residential - Outside	0	754	0	754	0	754	0	754	0	754	0	754	754
Low Income - Inside	4	0	4	0	4	0	4	0	4	0	4	0	4
Low Income - Outside	0	25	0	25	0	25	0	25	0	25	0	25	25
Multi-Family - Inside	53	14	53	14	53	14	53	14	53	14	53	14	53
Multi-Family - Outside	0	12	0	12	0	12	0	12	0	12	0	12	12
Com/Ind - Inside	86	84	86	84	86	84	86	84	86	84	86	84	86
Coml/Ind - Outside	38	39	38	39	38	39	38	39	38	39	38	39	39
10" Com/Ind - Outside	1	1	1	1	1	1	1	1	1	1	1	1	1
Total Number of Accounts	957	933	957	933	957	933	957	933	957	933	957	933	1,749
Consumption (CCF)													
Residential - Inside	6,256	553	7,376	604	6,449	764	11,338	183	10,830	26	6,601	692	51,670
Residential - Outside	85	8,266	69	7,405	68	10,016	78	16,792	154	9,303	37	8,178	60,449
Low Income - Inside	431	93	475	105	475	121	523	101	448	95	437	134	3,438
Low Income - Outside	0	232	0	235	0	262	0	397	0	226	0	267	1,619
Multi-Family - Inside	2,206	1,636	2,319	903	2,205	1,042	2,344	935	2,071	869	2,117	1,164	19,813
Multi-Family - Outside	0	280	0	274	0	351	0	364	0	297	0	388	1,953
Com/Ind - Inside	1,395	1,506	1,255	1,394	2,641	11,992	3,349	4,302	3,239	1,891	1,466	1,574	36,004
Coml/Ind - Outside	6,727	8,892	6,597	7,040	10,398	7,087	15,375	33,767	7,586	8,524	8,019	8,665	128,677
10" Com/Ind - Outside	4,602	5,425	4,387	6,288	4,690	4,249	7,824	4,956	5,291	4,534	6,183	3,280	61,708
Total Consumption	21,702	26,883	22,478	24,248	26,925	35,885	40,832	61,795	29,618	25,765	24,861	24,341	365,332
Revenues													
Residential - Inside	$26,573	$1,089	$28,702	$1,186	$26,939	$1,490	$36,229	$386	$35,263	$87	$27,228	$1,352	$186,524
Residential - Outside	298	55,559	242	52,531	238	61,709	275	85,525	540	59,201	131	55,249	371,497
Low Income - Inside	763	158	837	178	837	206	919	171	792	161	773	228	6,025
Low Income - Outside	0	1,076	0	1,087	0	1,172	0	1,596	0	1,058	0	1,186	7,175
Multi-Family - Inside	6,087	3,453	6,301	2,061	6,085	2,326	6,349	2,122	5,829	1,997	5,918	2,556	51,084
Multi-Family - Outside	0	1,723	0	1,702	0	1,973	0	2,019	0	1,785	0	2,103	11,304
Com/Ind - Inside	4,948	5,112	4,682	4,899	7,315	25,035	8,660	10,424	8,452	5,844	5,082	5,242	95,696
Coml/Ind - Outside	23,672	29,876	23,302	24,599	34,135	24,734	48,318	100,770	26,119	28,828	27,355	29,229	420,937
10" Com/Ind - Outside	12,988	14,718	12,537	16,529	13,174	12,248	19,756	13,732	14,436	12,847	16,310	10,049	169,323
Total Revenues	$75,330	$112,764	$76,603	$104,772	$88,722	$130,892	$120,507	$216,744	$91,430	$111,808	$82,797	$107,194	$1,319,563

2014 Actual $1,191,272
Difference *$128,291*
10.77%

City of Kalama
Water Utility Rate Study
Development of Commodity Allocation Factor
Exhibit 7

	Consumption in CCF	Outside Surcharge	4.2% Unaccounted Water [1]	Net Water Delivered	Average Day Use (MGD)	% of Total	Total Outside Consumption	% of Total Outside Consumption
Residential - Inside	51,670	1.00	2,170	53,841	0.11	14.5%		
Residential - Outside	60,449	1.00	2,539	62,988	0.13	17.0%	60,449	24%
Low Income - Inside	3,438	1.00	144	3,582	0.01	1.0%		
Low Income - Outside	1,619	1.00	68	1,687	0.00	0.5%	1,619	1%
Multi-Family - Inside	19,813	1.00	832	20,645	0.04	5.6%		
Multi-Family - Outside	1,953	1.00	82	2,035	0.00	0.5%	1,953	1%
Com/Ind - Inside	26,006	1.00	1,092	27,099	0.06	7.3%		
Com/Ind - Outside	128,677	1.00	5,404	134,082	0.27	36.2%	128,677	51%
10" Com/Ind - Outside	61,708	1.00	2,592	64,300	0.13	17.4%	61,708	24%
Total	355,334		14,924	370,258	0.76	100.0%	254,407	100%
Allocation Factor			Actual Production [1]	388,325	0.80	**(COMM)**		**(DA-1)**

NOTES:
[1] Unassigned useage from file "Utility Data - Water (JC)"
[2] Actual production in gallons, from 2013 DOH Water Use Efficiency Annual Performance Report.

City of Kalama
Water Utility Rate Study
Development of Capacity Allocation Factor
Exhibit 8

	Average Consumption (MGD)	Peaking Factors [1]	Peak Day Use (MGD)	% of Total
Residential - Inside	0.11	1.50	0.17	10.2%
Residential - Outside	0.13	2.00	0.26	16.0%
Low Income - Inside	0.01	1.25	0.01	0.6%
Low Income - Outside	0.00	1.25	0.00	0.3%
Multi-Family - Inside	0.04	1.55	0.07	4.1%
Multi-Family - Outside	0.00	1.50	0.01	0.4%
Com/Ind - Inside	0.06	2.75	0.15	9.5%
Com/Ind - Outside	0.27	2.75	0.76	46.8%
10" Com/Ind - Outside	0.13	1.50	0.20	12.2%
Total	0.76		1.62	100.00%
Allocation Factor		Actual Peak Day [2]	1.68	**(CAP)**

NOTES:
[1] Developed from peak month to average month
[2] Provided by the City in email "Reponse to Data Request", water system peak.

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

	Actual Customer		Customer Service & Accounting			
	Number of Living Units	% of Total	Number of Customers	Weighting Factor	Weighted Customer	% of Total
Residential - Inside	779	41.7%	779	1.0	779	44.4%
Residential - Outside	754	40.4%	754	1.0	754	43.0%
Low Income - Inside	4	0.2%	4	1.0	4	0.2%
Low Income - Outside	25	1.3%	25	1.0	25	1.4%
Multi-Family - Inside	147	7.9%	53	1.0	53	3.0%
Multi-Family - Outside	33	1.8%	12	1.0	12	0.7%
Com/Ind - Inside	86	4.6%	86	1.0	86	4.9%
Com/Ind - Outside	39	2.1%	39	1.0	39	2.2%
10" Com/Ind - Outside	1	0.1%	1	1.0	1	0.1%
Total	1,868	100.0%	1,753		1,753	100.0%
Allocation Factor		**(AC)**				**(WCA)**

	Meters & Services	
	Equivalent Meters	% of Total
Residential - Inside	781	34.4%
Residential - Outside	760	33.5%
Low Income - Inside	4	0.2%
Low Income - Outside	25	1.1%
Multi-Family - Inside	99	4.4%
Multi-Family - Outside	15	0.7%
Com/Ind - Inside	205	9.0%
Com/Ind - Outside	269	11.8%
10" Com/Ind - Outside	115	5.1%
Total	2,272	100.0%
		(WCMS)

DEVELOPMENT OF EQUIVALENT METER ALLOCATION FACTOR

	Number of Meters									
	3/4"	1"	1 1/2"	2"	3"	4"	6"	8"	10"	Total
Residential - Inside	778	1	0	0	0	0	0	0	0	779
Residential - Outside	750	4	0	0	0	0	0	0	0	754
Low Income - Inside	4	0	0	0	0	0	0	0	0	4
Low Income - Outside	25	0	0	0	0	0	0	0	0	25
Multi-Family - Inside	26	26	0	1	0	0	0	0	0	53
Multi-Family - Outside	10	2	0	0	0	0	0	0	0	12
Com/Ind - Inside	57	17	4	5	3	0	0	0	0	86
Com/Ind - Outside	12	9	1	8	6	3	0	0	0	39
10" Com/Ind - Outside	0	0	0	0	0	0	0	0	1	1
Total Meters	1,662	59	5	14	9	3	0	0	1	1,753
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	778	3	0	0	0	0	0	0	0	781	1.00	34.4%
Residential - Outside	750	10	0	0	0	0	0	0	0	760	1.01	33.5%
Low Income - Inside	4	0	0	0	0	0	0	0	0	4	1.00	0.2%
Low Income - Outside	25	0	0	0	0	0	0	0	0	25	1.00	1.1%
Multi-Family - Inside	26	65	0	8	0	0	0	0	0	99	1.87	4.4%
Multi-Family - Outside	10	5	0	0	0	0	0	0	0	15	1.25	0.7%
Com/Ind - Inside	57	43	20	40	45	0	0	0	0	205	2.38	9.0%
Com/Ind - Outside	12	23	5	64	90	75	0	0	0	269	6.88	11.8%
10" Com/Ind - Outside	0	0	0	0	0	0	0	0	115	115	115.00	5.1%
Total Equivalent Meters	1,662	148	25	112	135	75	0	0	115	2,272		100.0%

City of Kalama
Water Utility Rate Study
Development of the Public Fire Protection Allocation 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	779	1,000	60	46,740	51.3%
Residential - Outside	754	0	0	0	0.0%
Low Income - Inside	4	1,000	60	240	0.3%
Low Income - Outside	25	0	0	0	0.0%
Multi-Family - Inside	147	1,500	60	13,230	14.5%
Multi-Family - Outside	33	0	0	0	0.0%
Com/Ind - Inside	86	3,000	120	30,960	34.0%
Com/Ind - Outside	39	0	0	0	0.0%
10" Com/Ind - Outside	1	0	0	0	0.0%
Total	1,868			91,170	100.0%

Allocation Factor **(FP)**

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

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

	Revenue 2016	% of Total
Residential - Inside	$188,389	14.1%
Residential - Outside	375,212	28.2%
Low Income - Inside	6,085	0.5%
Low Income - Outside	7,247	0.5%
Multi-Family - Inside	51,595	3.9%
Multi-Family - Outside	11,417	0.9%
Com/Ind - Inside	96,653	7.3%
Com/Ind - Outside	425,146	31.9%
10" Com/Ind - Outside	171,016	12.8%
Total	$1,332,759	100.0%
Allocation Factor		**(RR)**

City of Kalama
Water Utility Rate Study
Functionalization and Classification
Exhibit 12.1

	Net Plant In Service (12/31/13)	Commodity (COMM)	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										
Water Treatment Plant-2,800,000 gal	$2,586,902	$1,215,399	$1,371,502	$0	$0	$0	$0	$0	$0	47% COMM 53% CAP
Total Treatment	$2,586,902	$1,215,399	$1,371,502	$0	$0	$0	$0	$0	$0	
Source of Supply										
	$0	$0	$0	$0	$0	$0	$0	$0	$0	47% COMM 53% CAP
Total Source of Supply	$0	$0	$0	$0	$0	$0	$0	$0	$0	
Storage										
Lower Green Mtn. Water Tank 6000 gallons	$16,800	$0	$13,313	$0	$0	$0	$3,487	$0	$0	79% CAP 21% FP
Reservoir-80,000 gal	29,124	0	23,079	0	0	0	6,045	0	0	79% CAP 21% FP
Reservoir-220,000 gal	44,127	0	34,969	0	0	0	9,158	0	0	79% CAP 21% FP
Reservoir-2,000,000 gal	631,177	0	500,178	0	0	0	130,999	0	0	79% CAP 21% FP
Reservoir-60,000 gal	15,481	0	12,268	0	0	0	3,213	0	0	79% CAP 21% FP
Reservoir-60,000 gal	19,351	0	15,335	0	0	0	4,016	0	0	79% CAP 21% FP
Reservoir-100,000 gal	21,888	0	17,345	0	0	0	4,543	0	0	79% CAP 21% FP
Reservoir-30,000 gal	3,080	0	2,441	0	0	0	639	0	0	79% CAP 21% FP
Total Storage	$781,028	$0	$618,928	$0	$0	$0	$162,100	$0	$0	
Transmission & Distribution										
Estimated based on listing of assets	$8,114,626	$0	$4,057,313	$2,840,119	$0	$0	$1,217,194	$0	$0	50% CAP 35% AC 15% FP
Total Transmission & Distribution	$8,114,626	$0	$4,057,313	$2,840,119	$0	$0	$1,217,194	$0	$0	
Pump Station										
Water Pump Station	$20,678	$9,715	$10,963	$0	$0	$0	$0	$0	$0	47% COMM 53% CAP
Water Pump Station	128,459	60,354	68,105	0	0	0	0	0	0	47% COMM 53% CAP
Water Pump Station	38,832	18,244	20,588	0	0	0	0	0	0	47% COMM 53% CAP
Water Pump House	11,611	5,455	6,156	0	0	0	0	0	0	47% COMM 53% CAP
Water Pump Station	576	271	305	0	0	0	0	0	0	47% COMM 53% CAP
Total Pump Station	$200,155	$94,039	$106,117	$0	$0	$0	$0	$0	$0	
Total Plant Before General	**$11,682,712**	**$1,309,438**	**$6,153,860**	**$2,840,119**	**$0**	**$0**	**$1,379,294**	**$0**	**$0**	
% of Total Plant	***100.0%***	***11.2%***	***52.7%***	***24.3%***	***0.0%***	***0.0%***	***11.8%***	***0.0%***	***0.0%***	
General Plant										
Public Works Shop	$20,475	$2,295	$10,785	$4,978	$0	$0	$2,417	$0	$0	As Total Plant Before General
Total General Plant	$20,475	$2,295	$10,785	$4,978	$0	$0	$2,417	$0	$0	
General Plant % of Total Plant	*0.2%*	*0.2%*	*0.2%*	*0.2%*	*0.0%*	*0.0%*	*0.2%*	*0.0%*	*0.0%*	
Net Plant In Service	**$11,703,187**	**$1,311,733**	**$6,164,646**	**$2,845,097**	**$0**	**$0**	**$1,381,712**	**$0**	**$0**	
% of Net Plant In Service	***100.0%***	***11.2%***	***52.7%***	***24.3%***	***0.0%***	***0.0%***	***11.8%***	***0.0%***	***0.0%***	

City of Kalama
Water Utility Rate Study
Distribution Storage
Exhibit 13

Fire Protection

	Capacity (Gallons)	Fire Related %	Fire Capacity (Gal)
Kingwood No. 1	0	0%	0
Kingwood No. 3	2,000,000	25%	500,000
Taylor	200,000	25%	50,000
Cemetery	10,000	0%	0
Vivian	30,000	0%	0
Simmons	60,000	0%	0
Upper Gore	10,000	0%	0
Lower Gore	30,000	0%	0
Jaeger	100,000	0%	0
Agate Mountain	70,000	0%	0
Confer	80,000	0%	0
Lower Green Mtn. [2010]	60,000	0%	0
	2,650,000		550,000

% Public Fire Protection	20.8%
% Capacity	79.2%

Distribution Main Analysis

Main Size	Length (Feet)	Replacement Cost ($) [1]	Total
< or =3"	40,900	$100	$4,090,000
4"	16,200	100	1,620,000
6"	43,100	140	6,034,000
8"	121,900	160	19,504,000
10"	7,000	180	1,260,000
12"	51,300	200	10,260,000
16"	7,600	250	1,900,000
	288,000		$44,668,000

Actual Customer		
1) Total @ 4" Equiv	$28,800,000	**64.5%**
Capacity		
2) Cost of 4" - 10"	$28,418,000	
3) Equiv. 10" for larger	$10,602,000	**22.9%**
Fire Protection		**12.6%**

[1] - Costs are from other similar utilities

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

	Expenses 2016	Commodity (COMM)	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
Expenses										
Operations & Maintenance										
Salaries - Admin.-General	$65,920	$7,389	$34,723	$16,025	$0	$0	$7,783	$0	$0	As Net Plant In Service
Benefits - Admin.	30,090	3,373	15,850	7,315	0	0	3,553	0	0	As Net Plant In Service
Supplies	1,030	115	543	250	0	0	122	0	0	As Net Plant In Service
Travel - Administrative	505	57	266	123	0	0	60	0	0	As Net Plant In Service
Equipment Maintenance - Admin	6,798	762	3,581	1,653	0	0	803	0	0	As Net Plant In Service
Miscellaneous	2,525	0	0	0	2,525	0	0	0	0	100% WCA
Legal Services - Retainer, Etc	0	0	0	0	0	0	0	0	0	As Net Plant In Service
Salaries - Water/maintenance	123,600	13,854	65,106	30,048	0	0	14,593	0	0	As Net Plant In Service
Overtime Earnings - Maint.	12,360	1,385	6,511	3,005	0	0	1,459	0	0	As Net Plant In Service
Regular Benefits	61,200	6,860	32,237	14,878	0	0	7,225	0	0	As Net Plant In Service
Uniforms	1,545	173	814	376	0	0	182	0	0	As Net Plant In Service
Operating Supplies	32,960	3,694	17,362	8,013	0	0	3,891	0	0	As Net Plant In Service
Fuel Consumed	11,385	1,276	5,997	2,768	0	0	1,344	0	0	As Net Plant In Service
Inventory - Meters/Pipe/Fittings	36,050	2,020	9,495	4,382	0	18,025	2,128	0	0	50% WCMS 50% Plant
Small Tools & Minor Equipment	2,575	289	1,356	626	0	0	304	0	0	As Net Plant In Service
Equipment Rental - Maint.	1,030	115	543	250	0	0	122	0	0	As Net Plant In Service
Repairs & Mtce. - Contracted	12,360	1,385	6,511	3,005	0	0	1,459	0	0	As Net Plant In Service
Equipment Maintenance - Maint.	5,150	577	2,713	1,252	0	0	608	0	0	As Net Plant In Service
Vehicle Maintenance	7,210	808	3,798	1,753	0	0	851	0	0	As Net Plant In Service
Salaries - Water/operations	59,328	6,650	31,251	14,423	0	0	7,004	0	0	As Net Plant In Service
Overtime Earnings - Oper.	22,660	2,540	11,936	5,509	0	0	2,675	0	0	As Net Plant In Service
Benefits - Oper.	34,680	3,887	18,268	8,431	0	0	4,094	0	0	As Net Plant In Service
Operating Supplies-Chemicals	51,500	51,500	0	0	0	0	0	0	0	100% Comm
Other Professional Services	6,180	693	3,255	1,502	0	0	730	0	0	As Net Plant In Service
Equipment Rental	0	0	0	0	0	0	0	0	0	As Net Plant In Service
Electricity	98,325	81,610	0	0	0	0	0	0	16,715	83% Comm 17% DA
Repairs & Maintenance	8,240	924	4,340	2,003	0	0	973	0	0	As Net Plant In Service
Intergovernmental Professional Services	6,180	693	3,255	1,502	0	0	730	0	0	As Net Plant In Service
Salaries-Facilities/shop	1,236	139	651	300	0	0	146	0	0	As Net Plant In Service
ON Call Pay	8,652	970	4,557	2,103	0	0	1,021	0	0	As Net Plant In Service
Undistributed Benefits	2,550	286	1,343	620	0	0	301	0	0	As Net Plant In Service
Office Computer Supplies	515	58	271	125	0	0	61	0	0	As Net Plant In Service
Office & Oper. Supplies	515	58	271	125	0	0	61	0	0	As Net Plant In Service
Engineering	4,120	462	2,170	1,002	0	0	486	0	0	As Net Plant In Service
Communications	12,360	0	0	0	12,360	0	0	0	0	100% WCA
Travel	1,010	113	532	246	0	0	119	0	0	As Net Plant In Service
Utilities	7,763	7,763	0	0	0	0	0	0	0	100% Comm
Shop Maintenance	1,010	113	532	246	0	0	119	0	0	As Net Plant In Service
Miscellaneous & Training	3,535	396	1,862	859	0	0	417	0	0	As Net Plant In Service
Hydrant Permit Meter Deposits	2,060	0	0	0	0	0	2,060	0	0	100% FP
Total Operations & Maintenance	$746,712	$202,984	$291,900	$134,717	$14,885	$18,025	$67,485	$0	$16,715	

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

	Expenses 2016	Commodity (COMM)	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	
Taxes & Transfers											
Accounting Service Fees	$85,490	$0	$0	$0	$85,490	$0	$0	$0	$0	100%	WCA
Transfer Out	0	0	0	0	0	0	0	0	0	100%	RR
Trsf. TO 410 Equip Rsve PW	3,090	0	0	0	0	0	0	3,090	0	100%	RR
new Trsf. TO 410 Equip Rsve - WTP Equip. Repl.	6,000	0	0	0	0	0	0	6,000	0	100%	RR
new Trsf. To 410 Equip. Reserv - Meter Repl.	24,000	0	0	0	0	0	0	24,000	0	100%	RR
Transfer - Benefit Reserve 107	4,080	0	0	0	0	0	0	4,080	0	100%	RR
Transfer TO Audit #115	2,060	0	0	0	0	0	0	2,060	0	100%	RR
Transfer Out TO 115-Insurance	45,526	0	0	0	0	0	0	45,526	0	100%	RR
State Taxes	67,115	0	0	0	0	0	0	67,115	0	100%	RR
Total Taxes & Transfers	$237,361	$0	$0	$0	$85,490	$0	$0	$151,871	$0		
Depreciation Expense (estimated)	$350,000	$39,229	$184,362	$85,087	$0	$0	$41,322	$0	$0	As Net Plant In Service	
Total Revenue Requirement	**$1,334,073**	**$242,213**	**$476,262**	**$219,804**	**$100,375**	**$18,025**	**$108,807**	**$151,871**	**$16,715**		
Less: Other Revenues:											
Other Misc. Revenue	$1,515	$275	$541	$250	$114	$20	$124	$172	$19	As Total Revenue Requirement	
Water - Other Sales Tax Collection	1,010	183	361	166	76	14	82	115	13	As Total Revenue Requirement	
Hydrant Permit Meter Deposits	2,020	367	721	333	152	27	165	230	25	As Total Revenue Requirement	
Engineering Serv-Reimbursement	1,515	275	541	250	114	20	124	172	19	As Total Revenue Requirement	
Earned Interest in Operating Fund	513	93	183	85	39	7	42	58	6	As Total Revenue Requirement	
Total Other Revenues	$6,573	$1,193	$2,347	$1,083	$495	$89	$536	$748	$82		
Total Net Revenue Requirement	**$1,327,500**	**$241,020**	**$473,916**	**$218,721**	**$99,880**	**$17,936**	**$108,271**	**$151,123**	**$16,633**		
		18.2%	***35.7%***	***16.5%***	***7.5%***	***1.4%***	***8.2%***	***11.4%***	***1.3%***		

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

	Net Revenue Requirement	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com/Ind - Inside	Com/Ind - Outside	10" Com/Ind - Outside	*Basis of Allocation*
Commodity	$1,311,733	$203,435	$229,129	$73,139	$7,209	$96,004	$475,018	$227,800	*(COMM)*
Capacity	$6,164,646	$666,776	$1,001,938	$250,313	$23,875	$582,940	$2,884,326	$754,477	*(CAP)*
Actual Customer	$2,845,097	$1,192,565	$1,186,472	$223,891	$50,261	$130,984	$59,400	$1,523	*(AC)*
Cust. Acctg.	$0	$0	$0	$0	$0	$0	$0	$0	*(WCA)*
Meters & Services	$0	$0	$0	$0	$0	$0	$0	$0	*(WCMS)*
Public Fire Protection	$1,381,712	$711,997	$0	$200,505	$0	$469,209	$0	$0	*(FP)*
Revenue Related	$0	$0	$0	$0	$0	$0	$0	$0	*(RR)*
Direct Assign.	$0	$0	$0	$0	$0	$0	$0	$0	*(DA)*
Net Revenue Requirement	**$11,703,187**	**$2,774,773**	**$2,417,539**	**$747,849**	**$81,345**	**$1,279,137**	**$3,418,743**	**$983,800**	

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

	Net Revenue Requirement	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com/Ind - Inside	Com/Ind - Outside	10" Com/Ind - Outside	*Basis of Allocation*
Commodity	$241,020	$37,379	$42,100	$13,439	$1,325	$17,640	$87,280	$41,856	*(COMM)*
Capacity	$473,916	$51,259	$77,025	$19,243	$1,835	$44,814	$221,737	$58,001	*(CAP)*
Actual Customer	$218,721	$91,680	$91,212	$17,212	$3,864	$10,070	$4,566	$117	*(AC)*
Cust. Acctg.	$99,880	$44,613	$44,385	$3,020	$684	$4,900	$2,222	$57	*(WCA)*
Meters & Services	$17,936	$6,195	$6,199	$782	$118	$1,615	$2,120	$908	*(WCMS)*
Public Fire Protection	$108,271	$55,792	$0	$15,712	$0	$36,767	$0	$0	*(FP)*
Revenue Related	$151,123	$22,052	$43,367	$5,850	$1,295	$10,960	$48,208	$19,392	*(RR)*
Direct Assign.	$16,633	$0	$4,058	$0	$128	$0	$8,413	$4,034	*(DA)*
Net Revenue Requirement	**$1,327,500**	**$308,970**	**$308,346**	**$75,257**	**$9,248**	**$126,765**	**$374,546**	**$124,366**	

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

	2016 Expenses	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com/Ind - Inside	Com/Ind - Outside	10" Com/Ind - Outside	*Notes:*
Revenues at Present Rates	$1,332,759	$194,474	$382,459	$51,595	$11,417	$96,653	$425,146	$171,016	
Allocated Revenue Requirement	$1,327,500	$308,970	$308,346	$75,257	$9,248	$126,765	$374,546	$124,366	
Bal/(Def) of Funds	$5,259	($114,496)	$74,112	($23,663)	$2,169	($30,113)	$50,600	$46,650	
Allocated Rate Base	$11,703,187	$2,774,773	$2,417,539	$747,849	$81,345	$1,279,137	$3,418,743	$983,800	
Present Return on Rate Base	*0.0%*	*-4.1%*	*3.1%*	*-3.2%*	*2.7%*	*-2.4%*	*1.5%*	*4.7%*	
Proposed Return Component	$58,569	($105,738)	$84,614	($28,498)	$2,847	($48,744)	$119,656	$34,433	
Proposed Rate of Return	0.5%	-3.8%	3.5%	-3.8%	3.5%	-3.8%	3.5%	3.5%	
Proposed Rate Revenues	$1,386,069	$203,232	$392,960	$46,759	$12,095	$78,021	$494,202	$158,799	
Bal/(Def) of Funds	($53,310)	($8,758)	($10,502)	$4,836	($678)	$18,631	($69,056)	$12,217	
Required % Change in Rates	**4.0%**	**4.5%**	**2.7%**	**-9.4%**	**5.9%**	**-19.3%**	**16.2%**	**-7.1%**	
[1] Rate of return equals:		*8,758*	*10,502*	*(4,836)*	*678*	*(18,631)*	*69,056*	*(12,217)*	
Reflects the Current Cost of Debt		19.7%	16.5%	-21.2%	-4.1%	-66.1%	-6.3%	-25.2%	

City of Kalama
Water Utility Rate Study
Average Unit Costs
Exhibit 18

	Total	Residential - Inside	Residential - Outside	Multi-Family - Inside	Multi-Family - Outside	Com/Ind - Inside	Com/Ind - Outside	10" Com/Ind - Outside	*Notes:*
Consumption Related									
Commodity $/CCF	$0.68	$0.68	$0.68	$0.68	$0.68	$0.68	$0.68	$0.68	
Capacity $/CCF	$1.33	$0.93	$1.24	$0.97	$0.94	$1.72	$1.72	$0.94	
Fire/Revenue $/CCF	$0.73	$1.41	$0.70	$1.09	$0.66	$1.84	$0.37	$0.31	
Total $/CCF	$2.74	$3.02	$2.62	$2.74	$2.28	$4.24	$2.78	$1.93	
Customer Related									
Total $/Acct.	$15.01	$15.16	$15.17	$11.91	$11.78	$16.07	$19.04	$90.18	
Return Component $/CCF	$0.16	($1.92)	$1.36	($1.44)	$1.46	($1.87)	$0.93	$0.56	
Average Total Cost $/CCF	$3.90	$3.69	$6.33	$2.36	$6.19	$3.00	$3.84	$2.57	
Outside Surcharge			72%		162%		28%	-14%	
Average Current Costs $/CCF		$3.53	$6.16	$2.60	$5.85	$3.72	$3.30	$2.77	
			75%		125%		-11%	-25%	
Basic Data:									
Water Consumption (CCF)	355,334	55,108	62,068	19,813	1,953	26,006	128,677	61,708	
Number of Accounts	1,868	783	779	147	33	86	39	1	

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	$16,633	254,407	$0.07	$0.07	$0.13	$0.20

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

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

	Budget	Projected				
	2015	**2016**	**2017**	**2018**	**2019**	**2020**
Sources of Funds						
Total Rate Revenues	$959,748	$969,345	$979,039	$988,829	$998,717	$1,008,704
Total Other Revenues	3,300	3,351	3,432	3,505	3,846	4,438
Total Source of Funds	**$963,048**	**$972,696**	**$982,470**	**$992,334**	**$1,002,564**	**$1,013,142**
Expenses						
Total General Sewer Operations	$560,500	$576,738	$593,459	$610,679	$628,925	$647,739
Total Operations & Maintanence	**$560,500**	**$576,738**	**$593,459**	**$610,679**	**$628,925**	**$647,739**
Taxes & Transfers	**$126,500**	**$131,275**	**$132,082**	**$137,023**	**$137,960**	**$143,076**
Rate Funded Capital	**$0**	**$0**	**$60,000**	**$70,000**	**$80,000**	**$100,000**
Net Debt Service	**$295,000**	**$350,000**	**$350,000**	**$485,000**	**$580,000**	**$528,985**
Change in Working Capital	**($18,952)**	**$6,771**	**$41,783**	**($931)**	**($334)**	**$50,308**
Total Revenue Requirement	**$963,048**	**$1,064,784**	**$1,177,323**	**$1,301,771**	**$1,426,551**	**$1,470,108**
Balance/(Deficiency) of Funds	**$0**	**($92,088)**	**($194,853)**	**($309,437)**	**($423,987)**	**($456,966)**
Bal as a % of Rate Adj. Required	**0.0%**	**9.5%**	**19.9%**	**31.3%**	**42.5%**	**45.3%**
Proposed Rate Adjustment	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**8.5%**	**2.0%**
Add'l Revenue with Rate Adj.	**$0**	**$92,088**	**$194,853**	**$309,437**	**$423,987**	**$456,966**
Bal/(Def) After Rate Adj.	**$0**	**$0**	**$0**	**$0**	**$0**	**($0)**
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**
Debt Service Coverage Ratio (all debt)						
Before Rate Adjustment	1.31	1.08	1.06	0.75	0.61	0.66
After Proposed Rate Adjustment	1.31	1.61	2.18	2.03	2.08	2.38
Average Residential Customer Bill						
Customer Bill on Proposed Adjustment	$74.50	$81.58	$89.33	$97.81	$106.13	$108.25
Bill Difference - Monthly		$7.08	$7.75	$8.49	$8.31	$2.12
Cumulative Bill Difference		$7.08	$14.83	$23.31	$31.63	$33.75
Fund 401 - Operating Fund	$56,079	$62,850	$104,633	$103,702	$103,367	$112,661
Fund 413 - I & I IMPROVEMENT RESERVE	*$165,500*	*$140,806*	*$116,063*	*$91,270*	*$66,664*	*$67,330*
Fund 415 - SEWER IMPROVEMENT RESERVE	*$261,050*	*$276,834*	*$238,537*	*$215,945*	*$266,768*	*$345,963*
Fund 412 - SEWER LOAN RESERVE	*$232,029*	*$232,029*	*$232,029*	*$232,029*	*$232,029*	*$232,029*
Fund 410 - PUBLIC WORKS EQUIPMENT RESERVE	*$35,045*	*$38,208*	*$41,470*	*$44,835*	*$48,444*	*$52,424*
Total Ending Fund Balance	***$749,703***	***$750,727***	***$732,732***	***$687,781***	***$717,272***	***$810,406***

City of Kalama
Sewer Utility Rate Study
Excalations
Exhibit 2

	Budget	Projected					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	*Notes:*
Revenues:							
Residential - Customer Growth	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Commercial - Customer Growth	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
All - Customer Growth	1.0%	1.0%	1.0%	1.0%	1.0%	1.0%	
Miscellaneous Revenues	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Expenses:							
Salary	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Benefits	Budget	2.0%	2.0%	2.0%	2.0%	2.0%	
Medical Benefits	Budget	6.0%	6.0%	6.0%	6.0%	6.0%	
Materials & Supplies	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Equipment	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Miscellaneous	Budget	1.0%	1.0%	1.0%	1.0%	1.0%	
Utilities	Budget	3.5%	3.5%	3.5%	4.0%	4.0%	
Flat	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	
No Escalation	N/A	N/A	N/A	N/A	N/A	N/A	
Insurance	Budget	3.0%	3.0%	3.0%	3.0%	3.0%	
Interest:	0.2%	0.2%	0.2%	0.2%	0.5%	1.0%	
New Debt Service:							
Low Interest Loans							
Term in Years	20	20	20	20	20	20	
Rate	2.0%	2.0%	2.0%	2.5%	2.5%	2.5%	
Revenue Bond							
Term in Years	20	20	20	20	20	20	
Rate	5.0%	5.0%	5.0%	5.5%	5.5%	6.0%	

City of Kalama
Sewer Utility Rate Study
Revenue Requirement
Exhibit 3

	Budget	Projected					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	*Notes:*
Revenues							
Rate Revenues							
Residential	$574,364	$580,107	$585,909	$591,768	$597,685	$603,662	As Residential - Customer Growth
Multi-Family	188,173	190,055	191,955	193,875	195,814	197,772	As Residential - Customer Growth
Commercial/Industrial	197,211	199,183	201,175	203,186	205,218	207,270	As Commercial - Customer Growth
Total Rate Revenues	$959,748	$969,345	$979,039	$988,829	$998,717	$1,008,704	
Other Revenues							
Sewer-Other Sales Tax Collect.	$200	$202	$204	$206	$208	$210	As Miscellaneous Revenues
Other Op Income	1,500	1,515	1,530	1,545	1,561	1,577	As Miscellaneous Revenues
Engineering Serv-Reimbursement	1,500	1,515	1,530	1,545	1,561	1,577	As Miscellaneous Revenues
Earned Interest in Operating Fund	100	119	167	208	516	1,075	Calculated
Total Other Revenues	$3,300	$3,351	$3,432	$3,505	$3,846	$4,438	
Total Revenues	**$963,048**	**$972,696**	**$982,470**	**$992,334**	**$1,002,564**	**$1,013,142**	

City of Kalama
Sewer Utility Rate Study
Revenue Requirement
Exhibit 3

	Budget	Projected					
	2015	2016	2017	2018	2019	2020	*Notes:*
Expenses							
General Sewer Operations							
Salaries-Sewer/admin.general	$50,000	$51,500	$53,045	$54,636	$56,275	$57,964	As Salary
Benefits - admin	21,500	21,930	22,369	22,816	23,272	23,738	As Benefits
Office & Oper. Supplies	2,000	2,060	2,122	2,185	2,251	2,319	As Materials & Supplies
Travel-Administrative	500	505	510	515	520	526	As Miscellaneous
Equipment Maintenance-Office	4,600	4,738	4,880	5,027	5,177	5,333	As Materials & Supplies
Miscellaneous - admin	1,000	1,010	1,020	1,030	1,041	1,051	As Miscellaneous
Legal Services - Retainer, Etc	0	0	0	0	0	0	As Salary
Salaries-Sewer/maintenance	70,000	72,100	74,263	76,491	78,786	81,149	As Salary
Overtime Earnings - Admin	11,000	11,330	11,670	12,020	12,381	12,752	As Salary
Benefits - maint.	37,000	37,740	38,495	39,265	40,050	40,851	As Benefits
Operating Supplies	13,500	13,905	14,322	14,752	15,194	15,650	As Materials & Supplies
Fuel Consumed	7,500	7,763	8,034	8,315	8,648	8,994	As Utilities
Inventory Purchase - Pipe/Fittings	2,000	2,060	2,122	2,185	2,251	2,319	As Materials & Supplies
Small Tools	500	515	530	546	563	580	As Materials & Supplies
Equipment Rentals	500	515	530	546	563	580	As Equipment
Repairs & Mtce. - Contracted	30,000	30,900	31,827	32,782	33,765	34,778	As Equipment
Equipment Maintenance	2,000	2,060	2,122	2,185	2,251	2,319	As Equipment
Vehicle Maintenance	500	515	530	546	563	580	As Equipment
Salaries - Operations	58,000	59,740	61,532	63,378	65,280	67,238	As Salary
Overtime Earnings	15,000	15,450	15,914	16,391	16,883	17,389	As Salary
Benefits - oper.	30,000	30,600	31,212	31,836	32,473	33,122	As Benefits
Uniforms	1,500	1,545	1,591	1,639	1,688	1,739	As Materials & Supplies
Operating Supplies - Chemicals	75,000	77,250	79,568	81,955	84,413	86,946	As Materials & Supplies
Other Professional Services	2,000	2,060	2,122	2,185	2,251	2,319	As Salary
Professional Services	1,000	1,030	1,061	1,093	1,126	1,159	As Salary
Utilities	52,000	53,820	55,704	57,653	59,959	62,358	As Utilities
Repairs & Maintenance	8,000	8,240	8,487	8,742	9,004	9,274	As Equipment
Contracted Repairs	3,000	3,030	3,060	3,091	3,122	3,153	As Miscellaneous
Contract Services - Disposal	33,000	34,155	35,350	36,588	38,051	39,573	As Utilities
Intergovernmental Fees/Services	7,000	7,210	7,426	7,649	7,879	8,115	As Salary
ON Call Pay	8,400	8,652	8,912	9,179	9,454	9,738	As Salary
Undistributed Benefits	2,500	2,550	2,601	2,653	2,706	2,760	As Benefits
Office Computer Supplies	1,000	1,030	1,061	1,093	1,126	1,159	As Materials & Supplies
Engineering	2,000	2,060	2,122	2,185	2,251	2,319	As Salary
Communications	5,000	5,150	5,305	5,464	5,628	5,796	As Materials & Supplies
Travel	0	0	0	0	0	0	As Miscellaneous
Facilities Maintenance	0	0	0	0	0	0	As Materials & Supplies
Miscellaneous	2,000	2,020	2,040	2,061	2,081	2,102	As Miscellaneous
Total General Sewer Operations	$560,500	$576,738	$593,459	$610,679	$628,925	$647,739	
Total Operations & Maintanence	**$560,500**	**$576,738**	**$593,459**	**$610,679**	**$628,925**	**$647,739**	

City of Kalama
Sewer Utility Rate Study
Revenue Requirement
Exhibit 3

	Budget	Projected					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	*Notes:*
Taxes & Transfers							
Accounting Service Fees	$70,000	$72,100	$74,263	$76,491	$78,786	$81,149	As Salary
Trsf. TO 410 Equip Rsve PW	3,000	3,090	3,183	3,278	3,377	3,478	As Equipment
Transfer - Benefit Reserve 107	3,000	3,060	3,121	3,184	3,247	3,312	As Benefits
Transfer TO Audit # 115	0	2,020	0	2,040	0	2,061	As Miscellaneous
Transfer Out TO 115-Insurance	37,500	37,875	38,254	38,636	39,023	39,413	As Miscellaneous
Department of Revenue	13,000	13,130	13,261	13,394	13,528	13,663	As Miscellaneous
Total Taxes & Transfers	**$126,500**	**$131,275**	**$132,082**	**$137,023**	**$137,960**	**$143,076**	
Rate Funded Capital	**$0**	**$0**	**$60,000**	**$70,000**	**$80,000**	**$100,000**	$336,000 Estimated Depreciation
Debt Service							
DOE-SRF/WASTEWATER IMPROVEMENTS-415 (4.4%)	$85,438	$85,438	$85,438	$85,438	$85,438	$0	Debt Schedule
PWTF WWTP DESIGN-415 (.5%)	25,754	25,630	25,507	25,383	25,259	25,011	Debt Schedule (retires 2022)
DOE-SRF/WWTP CONSTRUCTION LOAN - 0%	295,496	295,496	295,496	295,496	295,496	295,496	Debt Schedule (retires 2027)
New Revenue bonds	0	0	0	0	0	0	Calculated @ 5% for 20 Yrs
New Low interest loans	0	0	0	80,184	208,478	208,478	Calculated @ 2% for 20 Yrs
Total Debt Service	$406,687	$406,564	$406,440	$486,500	$614,670	$528,985	
Less Other Funding	$111,687	$56,564	$56,440	$1,500	$34,670	$0	
Net Debt Service	**$295,000**	**$350,000**	**$350,000**	**$485,000**	**$580,000**	**$528,985**	
Change in Working Capital							
Operating Fund	($18,952)	$6,771	$41,783	($931)	($334)	$9,293	
Sewer Improvement Reserve	0	0	0	0	0	41,015	
Total Change in Working Capital	**($18,952)**	**$6,771**	**$41,783**	**($931)**	**($334)**	**$50,308**	
Total Revenue Requirement	**$963,048**	**$1,064,784**	**$1,177,323**	**$1,301,771**	**$1,426,551**	**$1,470,108**	
Balance/(Deficiency) of Funds	**$0**	**($92,088)**	**($194,853)**	**($309,437)**	**($423,987)**	**($456,966)**	
Bal as a % of Rate Adj. Required	**0.0%**	**9.5%**	**19.9%**	**31.3%**	**42.5%**	**45.3%**	
Proposed Rate Adjustment	**0.0%**	**9.5%**	**9.5%**	**9.5%**	**8.5%**	**2.0%**	
Add'l Revenue with Rate Adj.	**$0**	**$92,088**	**$194,853**	**$309,437**	**$423,987**	**$456,966**	
Bal/(Def) After Rate Adj.	**$0**	**$0**	**$0**	**$0**	**$0**	**($0)**	
Additional Rate Adjustment Required	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	**0.0%**	

City of Kalama
Sewer Utility Rate Study
Revenue Requirement
Exhibit 3

	Budget	Projected					
	2015	**2016**	**2017**	**2018**	**2019**	**2020**	*Notes:*
Average Residential Customer Bill	(Current rates; 3/4" meter + 6 CCF)						
Customer Bill on Proposed Adjustment	$74.50	$81.58	$89.33	$97.81	$106.13	$108.25	
Bill Difference - Monthly		7.08	7.75	8.49	8.31	2.12	
Cumulative Bill Difference		7.08	14.83	23.31	31.63	33.75	
Debt Service Coverage Ratio (all debt)							
Before Rate Adjustment	1.31	1.08	1.06	0.75	0.61	0.66	
After Proposed Rate Adjustment	1.31	1.61	2.18	2.03	2.08	2.38	
Cash Reserves							
Fund 401 - Operating Fund							
Beginning Balance	$75,000	$56,079	$62,850	$104,633	$103,702	$103,367	
Plus: Revenue	962,948	1,064,665	1,177,156	1,301,563	1,426,034	1,469,033	
Plus: Connection Fees	120,000	81,810	82,628	83,454	84,289	85,132	As All - Customer Growth
Interest	131	119	167	208	516	1,075	
Less: Expenses	(560,500)	(576,738)	(593,459)	(610,679)	(628,925)	(647,739)	
Less: Rate-Funded Capital	0	0	(60,000)	(70,000)	(80,000)	(100,000)	
Less: Taxes & Transfers	(126,500)	(131,275)	(132,082)	(137,023)	(137,960)	(143,076)	
Less: Connection Fees	(120,000)	(81,810)	(82,628)	(83,454)	(84,289)	(85,132)	
Less: Transfer to 415	(295,000)	(350,000)	(350,000)	(485,000)	(580,000)	(570,000)	
Ending Balance	$56,079	$62,850	$104,633	$103,702	$103,367	$112,661	
Target Balance - 60 Days O&M	*$90,000*	*$90,000*	*$100,000*	*$100,000*	*$100,000*	*$110,000*	
Fund 413 - I & I IMPROVEMENT RESERVE							
Beginning Balance	$90,000	$165,500	$140,806	$116,063	$91,270	$66,664	
Plus: Additions	0	0	0	0	0	0	
Plus: Loan repayment w/ interest	75,200						
Interest	300	306	257	207	394	667	
Less: Uses of Funds	0	(25,000)	(25,000)	(25,000)	(25,000)	0	
Ending Balance	$165,500	$140,806	$116,063	$91,270	$66,664	$67,330	
Fund 415 - SEWER IMPROVEMENT RESERVE							
Beginning Balance [1]	$267,438	$261,050	$276,834	$238,537	$215,945	$266,768	
Plus: Connection Fees	120,000	81,810	82,628	83,454	84,289	85,132	
Plus: Transfers from 401	295,000	350,000	350,000	485,000	580,000	570,000	
Interest	300	537	515	454	1,204	3,048	
Less: Debt Service	(406,687)	(406,564)	(406,440)	(486,500)	(614,670)	(528,985)	
Less: Capital Project Funding	(15,000)	(10,000)	(65,000)	(105,000)	0	(50,000)	
Ending Balance	$261,050	$276,834	$238,537	$215,945	$266,768	$345,963	
Target Balance - Depreciation Exp.	*$336,000*	*$346,000*	*$356,000*	*$367,000*	*$378,000*	*$389,000*	Escalated 3% per year
Fund 412 - SEWER LOAN RESERVE							
Beginning Balance	$232,029	$232,029	$232,029	$232,029	$232,029	$232,029	
Plus: Additions	0	0	0	0	0	0	
Less: Uses of Funds	0	0	0	0	0	0	
Ending Balance	$232,029	$232,029	$232,029	$232,029	$232,029	$232,029	
Fund 410 - PUBLIC WORKS EQUIPMENT RESERVE							
Beginning Balance	$31,978	$35,045	$38,208	$41,470	$44,835	$48,444	
Plus: Additions	3,000	3,090	3,183	3,278	3,377	3,478	
Interest	67	73	80	86	233	502	
Less: Uses of Funds	0	0	0	0	0	0	
Ending Balance	$35,045	$38,208	$41,470	$44,835	$48,444	$52,424	
Total Reserve Funds	***$749,703***	***$750,727***	***$732,732***	***$687,781***	***$717,272***	***$810,406***	
Total Target Reserve Balance	*$658,029*	*$668,029*	*$688,029*	*$699,029*	*$710,029*	*$731,029*	

City of Kalama
Sewer Utility Rate Study
Capital Improvement Plan
Exhibit 4

Capital Improvement Projects	2015	2016	2017	2018	2019	2020
Replace Sections of Leaking Sewer Line	$0	$25,000	$25,000	$25,000	$25,000	$25,000
Purchase Pipe Camera	0	0	0	0	0	0
Replace Equipment at Wastewater Treatment Plant	0	10,000	0	0	40,000	40,000
Install New Sewer Line Cloverdale to Parkland	0	0	250,000	0	0	0
Install New Sewer Line Rebel Under I-5 to Hendrickson	0	0	0	300,000	0	0
Install Pump Station at Rebel	0	0	0	400,000	0	0
Install New Sewer Line Hendrickson @Temco to WWTP	0	0	0	1,000,000	0	0
Install New Sewer Line Old Pac Hwy - Stone Forest to Todd Rd	0	0	0	2,000,000	0	0
Lift Station Upgrades	0	0	0	25,000	40,000	40,000
Rehab Sewer Lines North and East Elm Street	0	0	0	0	2,000,000	0
Rate Study (50%)	15,000	0	0	0	0	0
Total Capital Projects	$15,000	$35,000	$275,000	$3,750,000	$2,105,000	$105,000
Future Unidentified Capital Projects	$0	$0	$0	$0	$0	$45,000
Transfer to Capital Reserve	$0	$0	$0	$0	$0	$0
Total Capital Improvement Projects	**$15,000**	**$35,000**	**$275,000**	**$3,750,000**	**$2,105,000**	**$150,000**
Less: Outside Funding Sources						
Fund 413 - I & I IMPROVEMENT RESERVE	$0	$25,000	$25,000	$25,000	$25,000	$0
Fund 415 - SEWER IMPROVEMENT RESERVE	15,000	10,000	65,000	105,000	0	50,000
Fund 410 - PUBLIC WORKS EQUIPMENT RESERVE	0	0	0	0	0	0
Grant	0	0	0	0	0	0
Developer	0	0	125,000	2,300,000	0	0
Low Interest Loans	0	0	0	1,250,000	2,000,000	0
Revenue Bonds	0	0	0	0	0	0
Total Funding Sources	$15,000	$35,000	$215,000	$3,680,000	$2,025,000	$50,000
Rate Funded Capital	**$0**	**$0**	**$60,000**	**$70,000**	**$80,000**	**$100,000**

City of Kalama
Sewer Utility Rate Study
Debt Schedule
Exhibit 5

	FY 2014	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020	FY 2021	FY 2022	FY 2023	FY 2024	FY 2025	FY 2026	FY 2027	FY 2028	*Total*
DOE-SRF/WASTEWATER IMPROVEMENTS-415 (4.4%)																
Payment Amount	$85,600	$85,438	$85,438	$85,438	$85,438	$85,438	$0	$0	$0	$0	$0	$0	$0	$0	$0	$512,788
PWTF WWTP DESIGN-415 (.5%)																
Payment Amount	$25,900	$25,754	$25,630	$25,507	$25,383	$25,259	$25,011	$25,011	$25,011	$0	$0	$0	$0	$0	$0	$228,467
DOE-SRF/WWTP CONSTRUCTION LOAN - 0%																
Payment Amount	$295,500	$295,495.74	$295,495.74	$295,495.74	$295,495.74	$295,495.74	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$295,496	$0	$4,136,945
	$407,000	$406,687	$406,564	$406,440	$406,316	$406,192	$320,507	$320,507	$320,507	$295,496	$295,496	$295,496	$295,496	$295,496	$0	**$4,878,199**

City of Kalama
Sewer Utility Rate Study
Revenues at Present Rates - 2014 Rates
Exhibit 6a

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Fixed Monthly Charge														
Residential	***$/Acct***													
Bi - Monthly	$75.00	715	0	715	0	715	0	715	0	715	0	715	0	715
Monthly	37.50	7	7	7	7	7	7	7	7	7	7	7	7	7
Low Income	***$/Acct***													
Bi - Monthly	$50.00	54	0	54	0	54	0	54	0	54	0	54	0	54
Multi-Family	***$/Unit***													
Bi - Monthly	$65.00	62		62		62		62		62		62		62
Monthly	32.50	201	201	201	201	201	201	201	201	201	201	201	201	201
Commercial/Industrial	***$/Acct***													
3/4"	$43.50	33	33	33	33	33	33	33	33	33	33	33	33	33
3/4"(Out)	43.50	1	1	1	1	1	1	1	1	1	1	1	1	1
1"	55.00	11	11	11	11	11	11	11	11	11	11	11	11	11
1.5"	125.00	2	2	2	2	2	2	2	2	2	2	2	2	2
2"	180.00	2	2	2	2	2	2	2	2	2	2	2	2	2
3"	335.00	2	2	2	2	2	2	2	2	2	2	2	2	2
4"	500.00	0	0	0	0	0	0	0	0	0	0	0	0	0
10"	1,500.00	0	0	0	0	0	0	0	0	0	0	0	0	0
		1,090	259	1,090	259	1,090	259	1,090	259	1,090	259	1,090	259	1,090
Consumption Charge	**$/CCF**					***WWA + 10%***								
Residential	$5.50	7,334	0	8,560	0	560	0	7,098	0	5,964	0	7,864	0	37,379
Multi-Family	5.50	3,842	0	3,222	0	1,146	0	1,177	0	1,073	0	3,281	0	13,741
Commercial/Industrial	5.50	2,901	0	2,649	0	4,635	0	7,651	0	5,130	0	3,040	0	26,006
		14,077	0	14,431	0	6,341	0	15,926	0	12,167	0	14,185	0	77,127
Revenues														
Fixed Monthly Charge														
Residential		$53,888	$263	$53,888	$263	$53,888	$263	$53,888	$263	$53,888	$263	$53,888	$263	$324,900
Low Income		2,700	0	2,700	0	2,700	0	2,700	0	2,700	0	2,700	0	16,200
Multi-Family		10,563	6,533	10,563	6,533	10,563	6,533	10,563	6,533	10,563	6,533	10,563	6,533	102,570
Commercial/Industrial		3,364	3,364	3,364	3,364	3,364	3,364	3,364	3,364	3,364	3,364	3,364	3,364	40,368
														$484,038
Consumption Charge														
Residential		40,335	0	47,079	0	3,079	0	39,041	0	32,801	0	43,251	0	205,586
Multi-Family		21,133	0	17,722	0	6,304	0	6,471	0	5,901	0	18,046	0	75,577
Commercial/Industrial		15,957	0	14,570	0	25,492	0	42,080	0	28,218	0	16,719	0	143,035
Total Revenues		**$147,939**	**$10,159**	**$149,884**	**$10,159**	**$105,389**	**$10,159**	**$158,107**	**$10,159**	**$137,434**	**$10,159**	**$148,530**	**$10,159**	**$908,236**

	Actual 2013	2014 Budget	2015 Budget
	$890,503	**$909,348**	**$950,000**
Difference	*$17,734*	*($1,112)*	*($41,764)*
Percent	1.99%	-0.12%	-4.40%

City of Kalama
Sewer Utility Rate Study
Revenues at Present Rates - 2015 Rates
Exhibit 6b

		Jan-13	Feb-13	Mar-13	Apr-13	May-13	Jun-13	Jul-13	Aug-13	Sep-13	Oct-13	Nov-13	Dec-13	Total
Fixed Monthly Charge														
Residential	***$/Acct***													
Bi - Monthly	$77.00	715	0	715	0	715	0	715	0	715	0	715	0	715
Monthly	38.50	7	7	7	7	7	7	7	7	7	7	7	7	7
Low Income	***$/Acct***													
Bi - Monthly	$51.00	54	0	54	0	54	0	54	0	54	0	54	0	54
Multi-Family	***$/Unit***													
Bi - Monthly	$67.00	62		62		62		62		62		62		62
Monthly	33.50	201	201	201	201	201	201	201	201	201	201	201	201	201
Commercial/Industrial	***$/Acct***													
3/4"	$44.50	33	33	33	33	33	33	33	33	33	33	33	33	33
3/4"(Out)	44.50	1	1	1	1	1	1	1	1	1	1	1	1	1
1"	56.00	11	11	11	11	11	11	11	11	11	11	11	11	11
1.5"	127.50	2	2	2	2	2	2	2	2	2	2	2	2	2
2"	183.50	2	2	2	2	2	2	2	2	2	2	2	2	2
3"	340.00	2	2	2	2	2	2	2	2	2	2	2	2	2
4"	510.00	0	0	0	0	0	0	0	0	0	0	0	0	0
10"	1,525.00	0	0	0	0	0	0	0	0	0	0	0	0	0
		1,090	259	1,090	259	1,090	259	1,090	259	1,090	259	1,090	259	1,090
Consumption Charge	**$/CCF**													
						WWA + 10%								
Residential	$6.00	7,334	0	8,560	0	560	0	7,098	0	5,964	0	7,864	0	37,379
Multi-Family	6.00	3,842	0	3,222	0	1,146	0	1,177	0	1,073	0	3,281	0	13,741
Commercial/Industrial	6.00	2,901	0	2,649	0	4,635	0	7,651	0	5,130	0	3,040	0	26,006
		14,077	0	14,431	0	6,341	0	15,926	0	12,167	0	14,185	0	77,127
Revenues														
Fixed Monthly Charge														
Residential		$55,325	$270	$55,325	$270	$55,325	$270	$55,325	$270	$55,325	$270	$55,325	$270	$333,564
Low Income		2,754	0	2,754	0	2,754	0	2,754	0	2,754	0	2,754	0	16,524
Multi-Family		10,888	6,734	10,888	6,734	10,888	6,734	10,888	6,734	10,888	6,734	10,888	6,734	105,726
Commercial/Industrial		3,431	3,431	3,431	3,431	3,431	3,431	3,431	3,431	3,431	3,431	3,431	3,431	41,172
														$496,986
Consumption Charge														
Residential		$44,002	$0	$51,359	$0	$3,359	$0	$42,590	$0	$35,783	$0	$47,183	$0	$224,276
Multi-Family		23,054	0	19,333	0	6,877	0	7,060	0	6,438	0	19,686	0	82,447
Commercial/Industrial		17,408	0	15,894	0	27,810	0	45,905	0	30,783	0	18,239	0	156,039
Total Revenues		**$156,861**	**$10,434**	**$158,983**	**$10,434**	**$110,442**	**$10,434**	**$167,952**	**$10,434**	**$145,401**	**$10,434**	**$157,505**	**$10,434**	**$959,748**

	Actual 2013	2014 Actual	2015 Budget
	$890,503	**$909,348**	**$950,000**
Difference	*$69,245*	*$50,400*	*$9,748*
Percent	7.78%	5.54%	1.03%

City of Kalama
Sewer Utility Rate Study
Development of the Volume
Allocation Factor
Exhibit 7

	FY 2014 Annual flow in CCF	14.0% Inflow and Infiltration	Total Annual Flow at Plant in CCF	Avg. Daily Flow At Plant (MGD)	% of Total
Residential	37,379	5,233	42,612	0.087	48.5%
Multi-Family	13,741	1,924	15,665	0.032	17.8%
Commercial/Industrial	26,006	3,641	29,647	0.061	33.7%
	77,127	10,798	87,925	0.18	100.0%
		Actual Average Daily Flow [1]		**0.24**	

Allocation Factor **(VOL)**

NOTES:
[1] From the 2002 Wastewater Facilities Plan; data for year 2000.

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

	Actual Customer		Customer Service & Accounting			
	Number of Units	% of Total	Number of Units	Weighting Factor	Weighted Customer	% of Total
Residential	776	71.2%	776	1.00	776	71.2%
Multi-Family	263	24.1%	263	1.00	263	24.1%
Commercial/Industrial	51	4.7%	51	1.00	51	4.7%
	1,090	100.0%	1,090		1,090	100.0%
Allocation Factor		**(AC)**				**(WCA)**

City of Kalama
Sewer Utility Rate Study
Development of the Strength
Allocation Factor
Exhibit 9

		BOD			TSS		
	Annual Flow (100 GAL)	**Avg. Factor (mg/l)**	**Calculated Pounds**	**% of Total**	**Avg. Factor (mg/l)**	**Calculated Pounds**	**% of Total**
Residential	42,612	238	8,458	48.5%	256	9,105	48.5%
Multi-Family	15,665	238	3,109	17.8%	256	3,347	17.8%
Commercial/Industrial	29,647	238	5,885	33.7%	256	6,334	33.7%
	87,925		17,452	100.0%		18,786	100.0%
Allocation Factor				**(BOD)**			**(SS)**

NOTES:
[1] - Estimated based on 2002 Wastewater Facilities Plan; BOD avg = 287 & TSS avg = 205 (PDF pg. 100 & 101, respectively)

City of Kalama
Sewer Utility Rate Study
Development of the Revenue Related
Allocation Factor
Exhibit 10

	Projected Year 2016	% of Total
Residential	$580,107	59.8%
Multi-Family	190,055	19.6%
Commercial/Industrial	199,183	20.5%
	$969,345	100.0%

Allocation Factor **(RR)**

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

PLANT DESCRIPTION	Net Plant as of 12/31/2013	Volume (VOL)	Strength Related: Bio-Oxygen Demand (BOD)	Strength Related: Suspended Solids (SS)	Customer Related: Actual Customer (AC)	Customer Related: Weighted Customer Acct/Svcs (WCA)	Revenue (RR)	Direct (DA)	Basis of Classification
Collection									
	$7,943,775	$0	$0	$0	$7,943,775	$0	$0	$0	100% AC
Total Collection	$7,943,775	$0	$0	$0	$7,943,775	$0	$0	$0	
Lift Station									
Stone Forest Lift Station	$57,634	$57,634	$0	$0	$0	$0	$0	$0	100% VOL
Lift Station - Meeker Drive	30,000	30,000	0	0	0	0	0	0	100% VOL
Total Lift Station	$87,634	$87,634	$0	$0	$0	$0	$0	$0	
Treatment									
WWTP - 1,500,000 gal	$5,242,879	$2,621,439	$1,310,720	$1,310,720	$0	$0	$0	$0	50% VOL 25% BOD 25% SS
Total Treatment	$5,242,879	$2,621,439	$1,310,720	$1,310,720	$0	$0	$0	$0	
Land & Buildings									
Lift Station - Meeker Drive	$7,350	$7,350	$0	$0	$0	$0	$0	$0	100% VOL
Total Land & Buildings	$7,350	$7,350	$0	$0	$0	$0	$0	$0	
Plant Before General Plant	***$13,281,637***	***$2,716,423***	***$1,310,720***	***$1,310,720***	***$7,943,775***	***$0***	***$0***	***$0***	
% Plant Before General Plant	*100.0%*	*20.5%*	*9.9%*	*9.9%*	*59.8%*	*0.0%*	*0.0%*	*0.0%*	*Factor PBGP*
General Plant									
	$0	$0	$0	$0	$0	$0	$0	$0	30% AC 70% PBGP
Total General Plant	$0	$0	$0	$0	$0	$0	$0	$0	
Net Sewer Plant	**$13,281,637**	**$2,716,423**	**$1,310,720**	**$1,310,720**	**$7,943,775**	**$0**	**$0**	**$0**	

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

	Expenses 2016	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	$51,500	$10,533	$5,082	$5,082	$30,802	$0	$0	$0	As Net Plant In Service
Benefits - admin	21,930	4,485	2,164	2,164	13,116	0	0	0	As Net Plant In Service
Office & Oper. Supplies	2,060	421	203	203	1,232	0	0	0	As Net Plant In Service
Travel-Administrative	505	103	50	50	302	0	0	0	As Net Plant In Service
Equipment Maintenance-Office	4,738	969	468	468	2,834	0	0	0	As Net Plant In Service
Miscellaneous - admin	1,010	207	100	100	604	0	0	0	As Net Plant In Service
Legal Services - Retainer, Etc	0	0	0	0	0	0	0	0	As Net Plant In Service
Salaries-Sewer/maintenance	72,100	14,746	7,115	7,115	43,123	0	0	0	As Net Plant In Service
Overtime Earnings - Admin	11,330	2,317	1,118	1,118	6,776	0	0	0	As Net Plant In Service
Benefits - maint.	37,740	7,719	3,724	3,724	22,572	0	0	0	As Net Plant In Service
Operating Supplies	13,905	2,844	1,372	1,372	8,317	0	0	0	As Net Plant In Service
Fuel Consumed	7,763	1,588	766	766	4,643	0	0	0	As Net Plant In Service
Inventory Purchase - Pipe/Fittings	2,060	421	203	203	1,232	0	0	0	As Net Plant In Service
Small Tools	515	105	51	51	308	0	0	0	As Net Plant In Service
Equipment Rentals	515	105	51	51	308	0	0	0	As Net Plant In Service
Repairs & Mtce. - Contracted	30,900	6,320	3,049	3,049	18,481	0	0	0	As Net Plant In Service
Equipment Maintenance	2,060	421	203	203	1,232	0	0	0	As Net Plant In Service
Vehicle Maintenance	515	105	51	51	308	0	0	0	As Net Plant In Service
Salaries - Operations	59,740	12,218	5,896	5,896	35,731	0	0	0	As Net Plant In Service
Overtime Earnings	15,450	3,160	1,525	1,525	9,241	0	0	0	As Net Plant In Service
Benefits - oper.	30,600	6,258	3,020	3,020	18,302	0	0	0	As Net Plant In Service
Uniforms	1,545	316	152	152	924	0	0	0	As Net Plant In Service
Operating Supplies - Chemicals	77,250	38,625	19,313	19,313	0	0	0	0	50% VOL 25% BOD 25% SS
Other Professional Services	2,060	421	203	203	1,232	0	0	0	As Net Plant In Service
Professional Services	1,030	211	102	102	616	0	0	0	As Net Plant In Service
Utilities	53,820	26,910	13,455	13,455	0	0	0	0	50% VOL 25% BOD 25% SS
Repairs & Maintenance	8,240	1,685	813	813	4,928	0	0	0	As Net Plant In Service
Contracted Repairs	3,030	620	299	299	1,812	0	0	0	As Net Plant In Service
Contract Services - Disposal	34,155	0	0	34,155	0	0	0	0	100% SS
Intergovernmental Fees/Services	7,210	1,475	712	712	4,312	0	0	0	As Net Plant In Service
ON Call Pay	8,652	1,770	854	854	5,175	0	0	0	As Net Plant In Service
Undistributed Benefits	2,550	522	252	252	1,525	0	0	0	As Net Plant In Service
Office Computer Supplies	1,030	211	102	102	616	0	0	0	As Net Plant In Service
Engineering	2,060	421	203	203	1,232	0	0	0	As Net Plant In Service
Communications	5,150	1,053	508	508	3,080	0	0	0	As Net Plant In Service
Travel	0	0	0	0	0	0	0	0	As Net Plant In Service
Facilities Maintenance	0	0	0	0	0	0	0	0	As Net Plant In Service
Miscellaneous	2,020	413	199	199	1,208	0	0	0	As Net Plant In Service
Total General Sewer Operations	$576,738	$149,699	$73,378	$107,533	$246,126	$0	$0	$0	
Total Operations & Maintanence	**$576,738**	**$149,699**	**$73,378**	**$107,533**	**$246,126**	**$0**	**$0**	**$0**	

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

	Expenses 2016	Volume (VOL)	Bio-Oxygen Demand (BOD)	Suspended Solids (SS)	Actual Customer (AC)	Customer Acct/Svcs (WCA)	Revenue (RR)	Direct (DA)	*Basis of Classification*
Total Operations & Maintanence	**$576,738**	**$149,699**	**$73,378**	**$107,533**	**$246,126**	**$0**	**$0**	**$0**	
Taxes & Transfers									
Accounting Service Fees	$72,100	$0	$0	$0	$0	$72,100	$0	$0	100% WCA
Trsf. TO 410 Equip Rsve PW	3,090	802	393	576	1,319	0	0	0	As O&M
Transfer - Benefit Reserve 107	3,060	794	389	571	1,306	0	0	0	As O&M
Transfer TO Audit # 115	2,020	524	257	377	862	0	0	0	As O&M
Transfer Out TO 115-Insurance	37,875	9,831	4,819	7,062	16,163	0	0	0	As O&M
Department of Revenue	13,130	0	0	0	0	0	13,130	0	100% RR
Total Taxes & Transfers	**$131,275**	**$11,952**	**$5,858**	**$8,585**	**$19,650**	**$72,100**	**$13,130**	**$0**	
Rate Funded Capital	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	**$0**	As Net Plant In Service
Debt Service									
DOE-SRF/WASTEWATER IMPROVEMENTS-415 (4.4%)	$85,438	$17,474	$8,432	$8,432	$51,100	$0	$0	$0	As Net Plant In Service
PWTF WWTP DESIGN-415 (.5%)	25,630	12,815	6,408	6,408	0	0	0	0	As Treatment
DOE-SRF/WWTP CONSTRUCTION LOAN - 0%	295,496	147,748	73,874	73,874	0	0	0	0	As Treatment
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	$406,564	$178,037	$88,713	$88,713	$51,100	$0	$0	$0	
Less Other Funding	$56,564	$24,770	$12,342	$12,342	$7,109	$0	$0	$0	As Debt
Net Debt Service	**$350,000**	**$153,268**	**$76,371**	**$76,371**	**$43,991**	**$0**	**$0**	**$0**	As Debt
Change in Working Capital									
Operating Fund	$6,771	$1,758	$862	$1,263	$2,890	$0	$0	$0	As O&M
Sewer Improvement Reserve	$0	$0	$0	$0	$0	$0	$0	$0	As O&M
Total Change in Working Capital	**$6,771**	**$1,758**	**$862**	**$1,263**	**$2,890**	**$0**	**$0**	**$0**	
Total Revenue Requirement	**$1,064,784**	**$316,676**	**$156,469**	**$193,752**	**$312,657**	**$72,100**	**$13,130**	**$0**	
Less: Other Revenues									
Sewer-Other Sales Tax Collect.	$202	$60	$30	$37	$59	$14	$2	$0	As Total Rev Req
Other Op Income	1,515	451	223	276	445	103	19	0	As Total Rev Req
Engineering Serv-Reimbursement	1,515	451	223	276	445	103	19	0	As Total Rev Req
Earned Interest in Operating Fund	119	35	17	22	35	8	1	0	As Total Rev Req
Total Other Revenues	$3,351	$997	$492	$610	$984	$227	$41	$0	
Total Net Revenue Requirement	**$1,061,433**	**$315,680**	**$155,976**	**$193,142**	**$311,673**	**$71,873**	**$13,089**	**$0**	

City of Kalama
Sewer Utility Rate Study
Allocation of Revenue Requirement
Exhibit 13

	Net Revenue Requirement	Residential	Multi-Family	Commercial/ Industrial	*Basis of Allocation*
Volume (VOL)	$315,680	$152,993	$56,243	$106,444	*(VOL)*
Bio-Oxygen Demand (BOD)	$155,976	$75,593	$27,789	$52,594	*(BOD)*
Suspended Solids (SS)	$193,142	$93,606	$34,411	$65,126	*(SS)*
ActualCustomer (AC)	$311,673	$221,888	$75,202	$14,583	*(AC)*
CustomerAcct/Svcs (WCA)	$71,873	$51,168	$17,342	$3,363	*(WCA)*
Revenue (RR)	$13,089	$7,833	$2,566	$2,689	*(RR)*
Direct (DA)	$0	$0	$0	$0	*(DA)*
Net Revenue Requirement	**$1,061,433**	**$603,082**	**$213,553**	**$244,798**	

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

	2016 Expenses	Residential	Multi-Family	Commercial/ Industrial	*Notes:*
Revenue	$969,345	$580,107	$190,055	$199,183	
Allocated Revenue Requirement	$1,061,433	$603,082	$213,553	$244,798	
Subtotal Balance/(Deficiency)	($92,088)	($22,974)	($23,498)	($45,616)	
Required % Change in Rates	**9.5%**	**4.0%**	**12.4%**	**22.9%**	

City of Kalama
Sewer Utility Rate Study
Average Unit Costs
Exhibit 15

	Total	Residential	Multi-Family	Commercial/ Industrial	*Notes:*
Volume (VOL) $/CCF	$6.18	$4.09	$4.09	$4.09	
Bio-Oxygen Demand (BOD) $/CCF	$3.05	$2.02	$2.02	$2.02	
Suspended Solids (SS) $/CCF	$3.78	$2.50	$2.50	$2.50	
Revenue (RR)/Direct (DA) $/CCF	$0.26	$0.21	$0.19	$0.10	
Total $/CCF	$13.26	$8.83	$8.81	$8.72	
Customer $/Acct./Month	$29.32	$29.32	$29.32	$29.32	
Basic Data:					
Annual Sewer Flow(/CCF)	51,121	37,379	13,741	26,006	
Number of Accounts	1,090	776	263	51	