



Report on the

Wastewater Services Rate Study

Town of Telluride, Colorado

Project No. 72447

August 2013

Wastewater Services Rate Study

prepared for

Town of Telluride, Colorado

August 2013

Project No. 72447

prepared by

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

COPYRIGHT © 2013 BURNS & McDONNELL ENGINEERING COMPANY, INC.

August 28, 2013

Ms. Karen Guglielmo
Town of Telluride
Public Works Department
P.O. Box 397
Telluride, CO 81435

Wastewater Services Rate Study
Burns & McDonnell Project Number 72447

Ms. Guglielmo:

Burns & McDonnell is pleased to submit this report on the Wastewater Services Rate Study (Study) completed on behalf of the Town of Telluride, Colorado (the Town). The report summarizes the Study findings and provides details regarding development of the financial plan, test year revenue requirement, allocation of costs, and proposed wastewater rates.

To support the Study, the Town assembled a cross functional team with representation from utility management, utility operations, Town finance and billing, and others. This team provided excellent support on a broad array of matters including ready access to detailed data and direction on policy matters needed during the Study.

We appreciate the opportunity to be of service to the Town and are grateful for the cooperation and assistance received from staff throughout this project. Should you have any questions regarding this final report, please contact me.

Sincerely,

BURNS & MCDONNELL



David F. Naumann
Project Manager

TABLE OF CONTENTS

		<u>Page No.</u>
1.0	EXECUTIVE SUMMARY	1-1
1.1	Financial Planning	1-1
1.2	Proposed Rates	1-2
2.0	INTRODUCTION	2-1
2.1	Study Background	2-1
2.2	Project Approach	2-1
3.0	FINANCIAL PLANNING ANALYSIS	3-1
3.1	Wastewater Utility Revenues under Existing Rates	3-1
3.1.1	Historical and Projected Customers	3-1
3.1.2	Historical and Projected Volumes	3-2
3.1.3	Existing Wastewater Rates	3-2
3.1.4	User Revenues under Existing Rates	3-2
3.2	Wastewater Utility Expenditures	3-3
3.2.1	O&M Expenses	3-3
3.2.2	Projected Debt Service Requirements	3-7
3.3	Wastewater Utility Ten-Year Financial Plan	3-7
3.3.2	Wastewater System Capital Flow of Funds	3-10
4.0	COST OF SERVICE ANALYSIS	4-1
4.1	Introduction	4-1
4.2	Net Revenue Requirements	4-1
4.3	Cost of Service Methodology	4-2
4.4	Functional Cost Assignment	4-3
4.4.1	Operating Expenses	4-3
4.5	Units of Service	4-5
4.6	Unit Cost Development	4-6
4.7	Allocation of Costs to Customer Classes	4-6
5.0	PROPOSED RATE DESIGN	5-1
5.1	Introduction	5-1
5.2	Existing Wastewater Rates	5-1
5.3	Proposed Wastewater Rates	5-1
5.3.1	New Wastewater Rate Components	5-2
5.3.2	Typical Bills and Regional Comparison	5-2

LIST OF TABLES

	<u>Page No.</u>
Table 1-1: Proposed Wastewater Revenue Increases	1-1
Table 1-2: Typical Wastewater Bills	1-3
Table 3-1: Historical and Projected Accounts and Volume.....	3-2
Table 3-2: Existing Wastewater Rates.....	3-3
Table 3-3: Historical and Projected Wastewater User Revenues	3-3
Table 3-4: Historical and Projected Operation and Maintenance Expenses.....	3-5
Table 3-5: Capital Improvement Program	3-6
Table 3-6: Proposed Wastewater Revenue Increases	3-8
Table 3-7: Wastewater Utility Ten-Year Financial Plan	3-9
Table 4-1: Wastewater Utility Test Year 2014 Cost of Service	4-2
Table 4-2: Allocation of Operation and Maintenance Expenses	4-4
Table 4-3: Units of Service.....	4-5
Table 4-4: Units Cost Development	4-6
Table 4-5: Allocation of Costs to Customer Classes	4-7
Table 4-6: Comparison of Revenues under Existing Rates to Allocated Cost of Service.....	4-7
Table 5-1: Existing and Proposed 2014 Wastewater Rates	5-3
Table 5-2: Typical Wastewater Bills	5-4

LIST OF FIGURES

	<u>Page No.</u>
Figure 1-1: Wastewater Utility Operating Cash Flow with Proposed Revenue Adjustments.....	1-2
Figure 1-2: Regional Residential Wastewater Bill Comparison	1-3
Figure 2-1: Study Methodology	2-2
Figure 3-1: Wastewater Utility Operating Cash Flow under Existing Rates	3-7
Figure 3-2: Wastewater Utility Operating Cash Flow with Proposed Revenue Adjustments.....	3-11
Figure 5-1: Regional Residential Wastewater Bill Comparison	5-4

LIST OF ABBREVIATIONS

<u>Abbreviation</u>	<u>Term/Phrase/Name</u>
BABs	Build America Bonds
BMcD	Burns & McDonnell
BOD	Biochemical Oxygen Demand
CIP	Capital Improvement Program
FTE	Full Time Equivalent Employee
I/I	Infiltration/Inflow
Mgal	One Thousand Gallons
O&M	Operation and Maintenance
WEF	Water Environment Federation

1.0 EXECUTIVE SUMMARY

The Town of Telluride, Colorado (Town) retained Burns & McDonnell to perform a financial planning, cost of service, and rate design study (Study) for the Town's water and wastewater systems. The Study establishes a ten-year financial plan, and evaluates potential changes to the existing rate structure to equitably recover costs.

This Executive Summary and Report presents the major findings of the Study applicable to the Wastewater Utility. A separate report has been prepared for the Water Utility.

1.1 Financial Planning

Comprehensive financial planning conducted for the Wastewater Utility indicates that revenues under existing rates are not adequate to meet the current and projected cash obligations of the utility over the Study period. The need for revenue adjustments is influenced by the following factors:

- Relatively flat user charge revenue projections;
- Inflationary impacts on operation and maintenance expenses;
- Initiation of capital projects to renew or replace the aging distribution system.

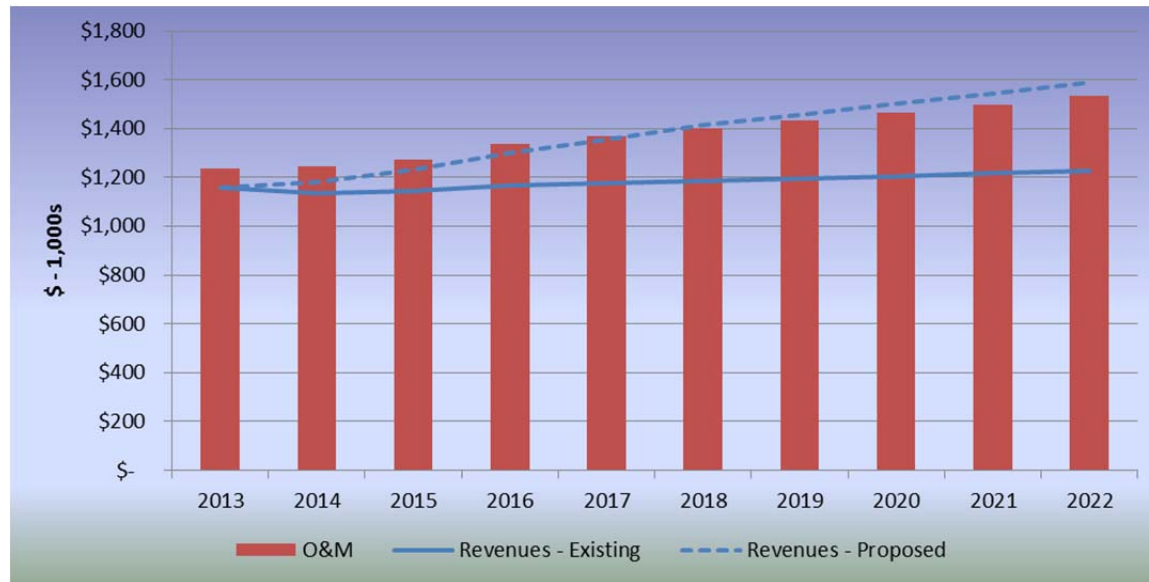
System-wide revenue adjustments have been proposed to provide adequate funding for operations and capital needs while maintaining an appropriate level of reserves. These increases are summarized in Table 1-1 below, and assume implementation on January 1 of each indicated year.

Table 1-1: Proposed Wastewater Revenue Increases

Year	Proposed Revenue Increase
2014	6.0%
2015	5.0%
2016	5.0%
2017	5.0%
2018	5.0%
2019	3.0%
2020	3.0%
2021	3.0%
2022	3.0%

The financial plan is illustrated in the Figure 1-1 below, in which the bars represent the major cash obligations while the lines depict revenues with and without proposed revenue adjustments. As shown, the proposed revenue adjustments are sufficient to meet projected obligations.

Figure 1-1: Wastewater Utility Operating Cash Flow with Proposed Revenue Adjustments



1.2 Proposed Rates

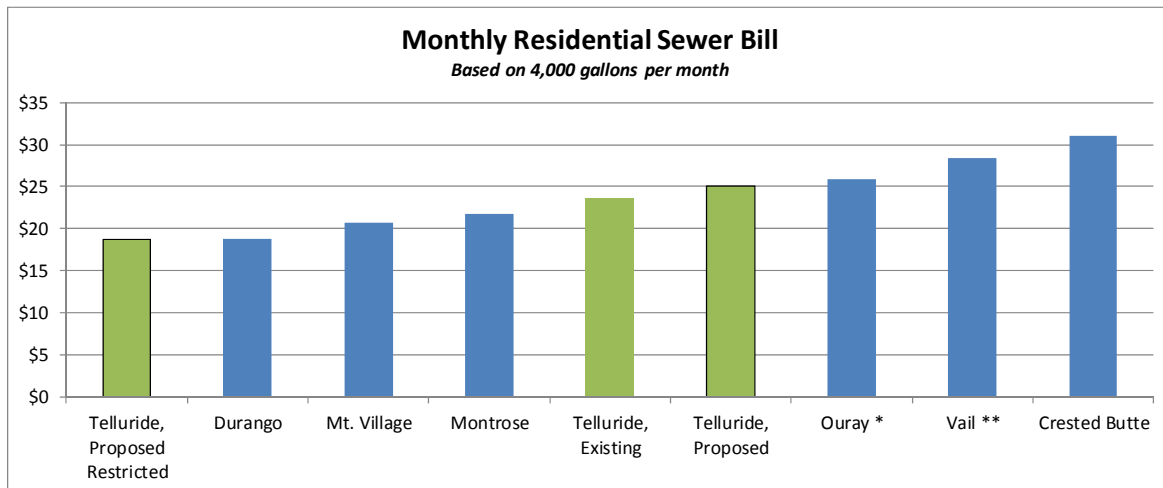
Detailed cost of service analysis was performed, and provided necessary context in the development of proposed rates. The existing rate structure was proposed to be maintained, with the addition of a new rate component for size and deed restricted Residential customers. A comparison of typical bills under existing and proposed rates is shown in Table 1-2.

A comparison of the Town's existing and proposed monthly Residential typical bills to other regional wastewater utilities was also conducted. The comparison shown in Figure 1-2 indicates that the typical residential wastewater bill under proposed rates is competitively positioned among regional wastewater utilities.

Table 1-2: Typical Wastewater Bills

Line No.	Description	Billable Flow Mgal	Monthly Bill		Proposed Increase / (Decrease)		
			Under Existing Rates \$	Under Proposed Rates \$	\$	%	
Residential In Town							
1	Deed and Sq Ft Restricted	1.5	\$ 23.61	\$ 18.75	\$ (4.86)	-20.6%	
2	All Other	3.0	\$ 23.61	\$ 25.13	\$ 1.52	6.4%	
Commercial 5/8" In Town							
3	Low	3.0	\$ 23.61	\$ 25.13	\$ 1.52	6.4%	
4	Medium	5.5	\$ 31.48	\$ 33.60	\$ 2.12	6.7%	
5	High	10.0	\$ 55.11	\$ 59.03	\$ 3.92	7.1%	
6	Average Commercial 2" In Town	38.0	\$ 215.11	\$ 229.66	\$ 14.55	6.8%	
7	Average Commercial 4" In Town	54.5	\$ 317.35	\$ 337.84	\$ 20.49	6.5%	

Figure 1-2: Regional Residential Wastewater Bill Comparison



* Excludes service fees

** Service provided by Eagle River Water & Sanitation District

2.0 INTRODUCTION

2.1 Study Background

The Town of Telluride, Colorado (Town) retained Burns & McDonnell (BMcD) to perform a financial planning, cost of service, and rate design study (Study) for the Town's water and wastewater systems. The Study establishes a ten-year financial plan, and evaluates potential changes to the existing rate structure to equitably recover costs. The Water and Wastewater Utilities are facing the following financial challenges:

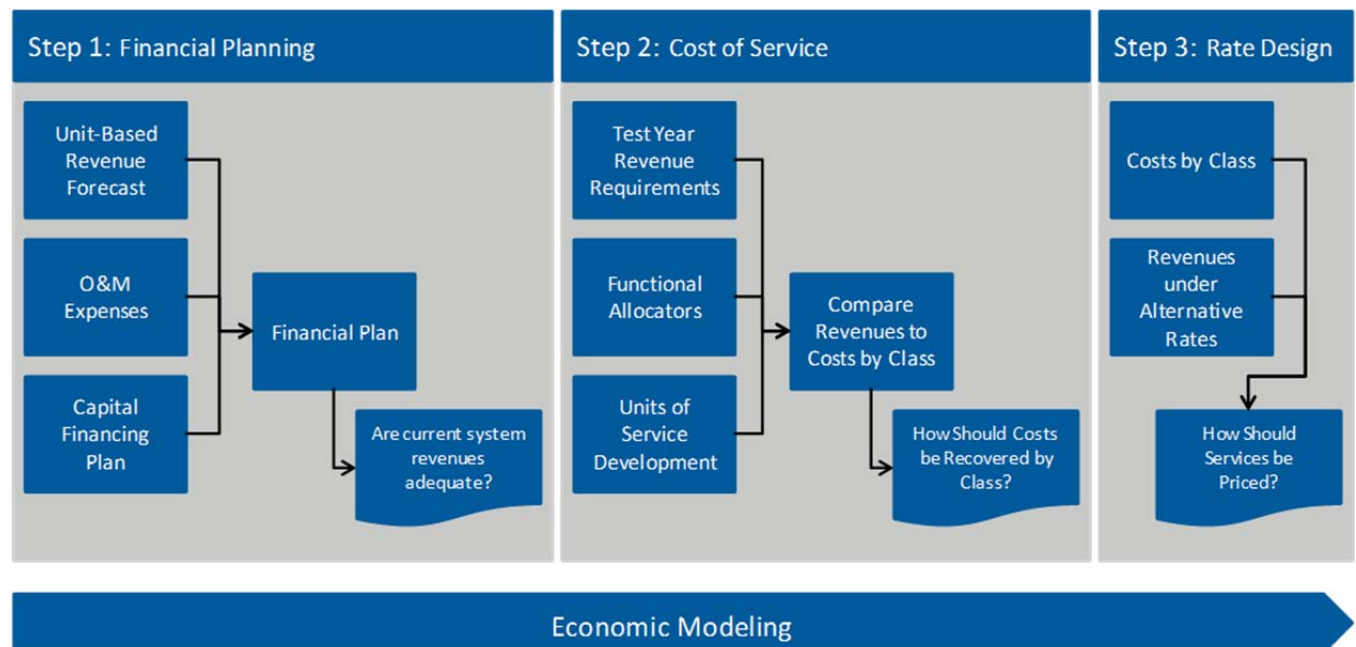
- Given the generally weak economic conditions prevalent within the community in recent years, efforts to maintain existing rate levels have made it difficult for both utilities to adequately fund operating costs.
- An asset management study concluded in 2013 assessed the condition of underground infrastructure for both utilities. Additional funding is necessary so that underground infrastructure in the most need of rehabilitation and repair can be addressed.
- The Water Utility is in the process of constructing a new water treatment plant (Pandora) which is planned to be operational in 2015. The Pandora plant represents a new source of water that will provide improved water supply levels with an improved quality of water to meet the Town's supply demands. Funding the remaining construction and future operating costs has been taken into consideration in this Study.

The financial plan presented herein for Wastewater Utility is designed to increase revenues to cover operating and capital requirements and to maintain utility reserves at an appropriate level. This report presents the findings of the Study applicable to the Wastewater Utility. A separate report has been prepared for the Water Utility.

2.2 Project Approach

To meet the project objectives identified by the Town, BMcD conducted the Study in a three-step approach. This approach, depicted in Figure 2-1, is grounded in the principles established by the Water Environment Federation (WEF) *Financing and Charges for Wastewater Systems*.

Step 1: Financial Planning provides an indication of the adequacy of the revenue generated by current rates. The results of the financial forecast analysis answer the questions "Are the existing rates adequate?" and "If not, what level of overall revenue increase is needed?" The Financial Planning Analysis is presented in Section 3.0 of this report.

Figure 2-1: Study Methodology

Step 2: Cost of Service focuses on assigning cost responsibility to customer classes. Each customer class is allocated an appropriate share of the overall system costs based on the level of service provided. The net revenue requirements (costs to be recovered from rates) identified in Step 1 are allocated to customers in accordance with industry standards and principles and system specifics. The Cost of Service Analysis is detailed in Section 4.0 of this report.

Step 3: Rate Design provides for the required revenue recovery. Once the overall level of revenue required is identified and customer class responsibility for that level of revenue is determined, schedules of rates for each rate class are developed that will generate revenues accordingly. The Rate Design Analysis is detailed in Section 5.0 of this report.

To oversee this Study effort, the Town established a cross functional team with representation from utility management, utility operations, and Town finance and billing. The team met during the course of the Study to discuss data, review deliverables, develop scenarios, and provide guidance on policies and other matters.

3.0 FINANCIAL PLANNING ANALYSIS

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

- "Are the existing rates adequate?"
- "If not, what level of overall revenue increase is needed?"

To determine if the existing schedule of rates can be expected to generate revenues sufficient to meet the Town's operating and capital costs, BMcD prepared a ten-year financial projection of revenues and expenditures for each utility. A comparison of projected revenues and expenditures provides insight into the adequacy of overall revenue levels.

Our approach to Financial Planning involves the following basic steps:

1. Project revenues under existing rates.
2. Project utility expenditures.
3. Develop ten-year financial plan, including the budget year and a nine-year forecast period.

The planning period includes the current fiscal year, 2013, as a budget year and a nine-year forecast period, FY 2014 – FY 2022. The Town utilizes a twelve-month fiscal year beginning January 1 and ending December 31. The Financial Plan Analysis recognizes and references the same fiscal year in the ten-year budget and planning period.

This section of the report discusses how the Wastewater Utility financial plan was developed, and identifies proposed revenue adjustments needed to provide adequate funding for future costs.

3.1 Wastewater Utility Revenues under Existing Rates

The first step in the Financial Plan Analysis was to project revenues under the existing schedule of rates. To complete this effort required an analysis of customers, volumes, and revenues.

3.1.1 Historical and Projected Customers

Table 3-1 presents the historical wastewater customers served by the Town from 2010 to 2012 and the projection of customers for the 2013 to 2022 planning period. In recent years, Telluride has experienced relatively little change in the number of accounts. Consistent with Water Utility projections, forecasted wastewater accounts reflect a relatively minimal growth rate of approximately 0.50 percent annually for residential accounts for 2013 through 2022.

3.1.2 Historical and Projected Volumes

Table 3-1 also presents the historical billed volumes, based on applicable water sales for 2010 to 2012, and the projection of volumes for the 2013 to 2022 planning period. Annual wastewater volumes decreased from 105,408 Mgal in 2010 to 100,789 Mgal in 2012. Overall projected volumes show a slight increase in billable wastewater volume caused by the impact of account growth.

Table 3-1: Historical and Projected Accounts and Volume

Line No.	Historical			Projected									
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Accounts													
1 Residential	936	946	955	960	965	970	975	980	985	990	995	1,000	1,005
2 Commercial	218	220	221	221	221	221	221	221	221	221	221	221	221
3 Construction Discount	-	1	8	8	8	8	8	8	8	8	8	8	8
4 Commercial - Out of Town	29	29	29	29	29	29	29	29	29	29	29	29	29
5 Commercial - Hillside	11	11	11	11	11	11	11	11	11	11	11	11	11
6 Hillside	51	51	51	51	51	51	51	51	51	51	51	51	51
7 Lawson	136	136	136	136	136	136	136	136	136	136	136	136	136
8 Aldasoro	67	69	69	70	71	72	73	74	75	76	77	78	79
9 Total Accounts	1,448	1,463	1,480	1,486	1,492	1,498	1,504	1,510	1,516	1,522	1,528	1,534	1,540
Billed Volume (1,000 Gallons)													
10 Residential	41,276	42,757	40,385	40,600	40,810	41,020	41,230	41,440	41,650	41,870	42,080	42,290	42,500
11 Commercial	51,933	50,860	48,936	48,930	48,930	48,930	48,930	48,930	48,930	48,930	48,930	48,930	48,930
12 Construction Discount	-	44	43	40	40	40	40	40	40	40	40	40	40
13 Commercial - Out of Town	1,723	1,637	1,507	1,520	1,520	1,520	1,520	1,520	1,520	1,520	1,520	1,520	1,520
14 Commercial - Hillside	2,443	2,418	2,553	2,510	2,510	2,510	2,510	2,510	2,510	2,510	2,510	2,510	2,510
15 Hillside	2,504	2,456	2,323	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300	2,300
16 Lawson	5,528	5,078	5,042	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100	5,100
17 Aldasoro	-	-	-	-	-	-	-	-	-	-	-	-	-
18 Total Billed Volume	105,408	105,250	100,789	101,000	101,210	101,420	101,630	101,840	102,050	102,270	102,480	102,690	102,900

3.1.3 Existing Wastewater Rates

The current wastewater rate schedule is shown in Table 3-2 and features a fixed bi-monthly base fee and a minimum usage allowance that varies according to class and meter size. For In-Town residential accounts, there are no volume-related fees. For In-Town commercial accounts, a flat rate of \$5.25 per Mgal is assessed for all volume that exceeds the minimum for each meter size.

The current rates were effective as of January 1, 2012.

3.1.4 User Revenues under Existing Rates

Table 3-3 presents user revenues for 2010 to 2012, and a projection of user revenues under existing rates for the 2013 to 2022 planning period. The projection of user revenues was estimated based on the forecasted accounts and volumes factored by the existing schedule of wastewater rates.

Historical wastewater user revenues were \$771,084 in 2010 and ranged up to \$786,405 in 2012.

Forecasted user revenues reflect the growth in customers and volume levels previously presented.

Overall, wastewater user revenues under existing rates are projected to range from \$788,300 in 2013 to \$806,600 in 2022.

Table 3-2: Existing Wastewater Rates

<i>In-Town Rates</i>					<i>In-Town Rates</i>				
Rate Class	Meter Size	Sewer Bi-Monthly Base Fee	Usage Block per 1,000 Gallons	Charge per 1,000 Gallons	Rate Class	Meter Size	Water Bi-Monthly Base Fee	Usage Block per 1,000 Gallons	Charge per 1,000 Gallons
Residential - In Town		\$ 47.21	(a)	\$ -	Commercial	1"	\$ 94.41	0 - 16 >16	\$ - \$ 5.25
EMT & Firefighter		\$ -	(a)	\$ -	Commercial	1.5"	\$ 188.81	0 - 32 >32	\$ - \$ 5.25
Commercial	5/8"	\$ 47.21	0 - 8 >8	\$ - \$ 5.25	Commercial	2"	\$ 283.22	0 - 48 >48	\$ - \$ 5.25
Commercial	3/4"	\$ 70.80	0 - 12 >12	\$ - \$ 5.25	Commercial	3"	\$ 424.83	0 - 72 >72	\$ - \$ 5.25
					Commercial	4"	\$ 566.44	0 - 96 >96	\$ - \$ 5.25

Out-of-Town Rates: All Out-of-Town customers will be charged rates of one hundred and twenty-five percent (125%) of the In-Town rates.

(a) No volume charge applies for these accounts.

Table 3-3: Historical and Projected Wastewater User Revenues

Line No.	Historical					Projected								
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	
User Revenues under Existing Rates														
1	Residential	\$ 267,481	\$ 280,508	\$ 296,088	\$ 297,600	\$ 299,200	\$ 300,700	\$ 302,300	\$ 303,800	\$ 305,400	\$ 306,900	\$ 308,500	\$ 310,000	\$ 311,600
2	Commercial	357,545	338,350	337,125	337,100	337,100	337,100	337,100	337,100	337,100	337,100	337,100	337,100	337,100
3	Construction Discount	-	270	417	400	400	400	400	400	400	400	400	400	400
4	Commercial - Out of Town	22,229	20,707	22,320	22,300	22,300	22,300	22,300	22,300	22,300	22,300	22,300	22,300	22,300
5	Commercial - Hillside	16,180	18,943	20,072	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100	20,100
6	Hillside	27,487	27,487	28,796	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800	28,800
7	Lawson	45,981	46,137	48,444	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400	48,400
8	Aldasoro	34,182	33,627	33,144	33,600	34,100	34,600	35,100	35,500	36,000	36,500	37,000	37,500	37,900
9	Total User Revenues	\$ 771,084	\$ 766,029	\$ 786,405	\$ 788,300	\$ 790,400	\$ 792,400	\$ 794,500	\$ 796,400	\$ 798,500	\$ 800,500	\$ 802,600	\$ 804,600	\$ 806,600

3.2 Wastewater Utility Expenditures

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

- Operation and Maintenance (O&M) Expenses
- Capital Improvement Program (CIP) Expenditures

3.2.1 O&M Expenses

Table 3-4 presents the recent wastewater O&M expense history and the projection of wastewater system O&M expenses through the 2022 planning period. The wastewater O&M expenses include the costs of Treatment Facility Expenses and Sewer System Expenses. Expenses summarized on Table 3-4 reflect operating costs associated with the Wastewater Utility. As such, costs related to major capital projects are excluded from Table 3-4 and will be discussed later in this report.

Recent history indicates that wastewater O&M expenses have ranged from a low of \$1,059,172 in 2011 to \$1,151,282 in 2012. O&M costs for 2013 are based on the approved budget. Projected O&M expenses

in general are escalated from budgeted 2013 amounts based on inflationary assumptions of 2.0 to 3.0 percent, with a few notable exceptions identified below.

In 2014, gas heating expense currently classified as Treatment Facility-related is expected to reduce from about \$15,000 to \$7,900, assuming approximately half the cost is reassigned to the Town dog pound facility. Additionally, costs associated with Wastewater System emergency repairs are reduced from \$30,000 in 2013 to \$20,000 in 2014 based on the expected initiation of asset management projects in 2014 that start to address portions of the collection system. Finally, expenses associated with the addition of one-half of an FTE are included to provide additional lab support beginning in 2016. Costs associated with the additional one-half FTE are included with Salaries, Wages, & Benefits costs on Line 1.

3.2.1.1 Projected Capital Improvement Expenditures

Table 3-5 shows the projected capital improvement expenditures identified by Town personnel for the 2013 to 2022 planning period. Major initiatives and forecasted ten-year total costs are summarized below.

- Rehabilitation and replacement of pipe characterized as “degraded,” \$1.38 million
- Treatment facility improvements, \$1.11 million
- Rehabilitation and replacement of pipe characterized as “unsatisfactory,” \$0.66 million
- Fleet vehicle replacement, \$0.39 million
- Collection system improvements, \$0.37 million
- Stream bank stabilization, \$0.30 million

The asset management efforts to address unsatisfactory pipe are projected to begin in 2014. At the amounts proposed, it is anticipated the pipe classified as unsatisfactory will be addressed by 2018. Asset management efforts directed at pipe classified as degraded are projected to start in 2016. It should be noted that asset management projects prioritized in the recent asset management study will continue beyond the end of the Study period in 2022. Compared to the Water Utility, the Wastewater Utility is forecasted to progress more substantially in addressing asset management needs through 2022.

Table 3-4: Historical and Projected Operation and Maintenance Expenses

Line No.	Historical			Budgeted	Projected										
	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022		
Treatment Facility Expenditures															
1	[1]	Salaries, Wages, & Benefits	269,560	265,409	274,844	296,000	302,600	309,400	352,100	359,800	367,700	375,800	384,100	392,500	401,100
2	52-50-241	Chemicals/Poly/Lime	13,905	19,145	18,221	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300	23,800
3	52-50-247	NPDES Permit Testing	5,067	5,298	5,365	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
4	52-50-248	Equipment Replacement	27,619	19,756	43,013	25,000	25,500	26,000	26,500	27,000	27,500	28,100	28,700	29,300	29,900
5	[2]	Sludge Disposal	13,475	12,873	30,726	14,000	14,300	14,600	14,900	15,200	15,500	15,800	16,100	16,400	16,700
6	52-50-270	Gas Heating	8,565	5,759	9,485	15,000	7,900	8,300	8,700	9,100	9,600	10,100	10,600	11,100	11,700
7	52-50-272	Electric Power	203,387	189,581	183,575	210,000	216,300	222,800	229,500	236,400	243,500	250,800	258,300	266,000	274,000
8	52-50-310	Prof/Technical Services	40,472	18,252	12,161	16,100	16,400	16,700	17,000	17,300	17,600	18,000	18,400	18,800	19,200
9	52-50-490	Gas & Oil	25,793	23,068	15,995	32,000	33,000	34,000	35,000	36,100	37,200	38,300	39,400	40,600	41,800
10	52-50-910	Transfer to Gen Fund - Admin	118,427	113,369	113,369	113,400	115,600	117,900	120,300	122,700	125,200	127,700	130,300	132,900	135,600
11	[3]	All Other	38,002	42,590	49,148	68,200	69,600	71,000	72,400	73,800	75,200	76,700	78,200	79,700	81,200
12	Total Treatment Facility Expenses		764,272	715,099	755,900	815,700	827,700	847,700	903,900	925,400	947,500	970,300	993,600	1,017,400	1,041,900
				-6.4%	5.7%	7.9%	1.5%	2.4%	6.6%	2.4%	2.4%	2.4%	2.4%	2.4%	2.4%
Sewer System Expenses															
13	[4]	Salaries, Wages, & Benefits	43,528	42,944	44,875	48,200	49,500	50,800	52,200	53,600	55,100	56,700	58,300	60,100	61,800
14	52-55-248	System O&M	34,659	8,628	45,595	35,000	35,700	36,400	37,100	37,800	38,600	39,400	40,200	41,000	41,800
15	52-55-250	Operating Supplies	1,680	4,016	2,671	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000	2,000
16	52-55-254	Equipment Rental	470	2,160	1,008	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
17	52-55-263	Sidewalk Repair	30	-	2,220	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
18	52-55-266	Radio Repairs	-	193	-	500	500	500	500	500	500	500	500	500	500
19	52-55-267	Vehicle Maint & Repair	3,904	3,423	1,208	8,500	8,600	8,800	9,000	9,200	9,400	9,600	9,800	10,000	10,200
20	52-55-270	Utilities	4,056	5,151	3,049	4,200	4,300	4,400	4,500	4,600	4,700	4,800	4,900	5,000	5,100
21	52-55-271	Emergency Repairs	-	-	17,022	30,000	20,000	20,400	20,800	21,200	21,600	22,000	22,400	22,800	23,300
22	52-55-310	Prof Services	-	-	175	6,000	6,100	6,200	6,300	6,400	6,500	6,600	6,700	6,800	6,900
23	52-55-910	Transfer to Gen Fund - Admin	289,943	277,558	277,558	277,600	283,100	288,800	294,600	300,500	306,500	312,600	318,900	325,300	331,800
24	Total Sewer System Expenses [5]		378,269	344,073	395,381	419,000	416,900	425,500	434,300	443,200	452,400	461,800	471,400	481,300	491,300
				-9.0%	14.9%	6.0%	-0.5%	2.1%	2.1%	2.0%	2.1%	2.1%	2.1%	2.1%	2.1%
25	Total Sewer Operating Expenses		1,142,541	1,059,172	1,151,282	1,234,700	1,244,600	1,273,200	1,338,200	1,368,600	1,399,900	1,432,100	1,465,000	1,498,700	1,533,200
				-7.3%	8.7%	7.2%	0.8%	2.3%	5.1%	2.3%	2.3%	2.3%	2.3%	2.3%	2.3%

Notes

[1] Includes accounts 52-50-110 to -139

[2] Includes accounts 52-50-249 Sludge Disposal Permit and -268 Sludge Truck Maintenance.

[3] Includes accounts 52-50-210, 240, 242-246, 254-267, 280, 330-460, & 610. Account 750 (Improvements) is included in the capital improvement program.

[4] Includes accounts 52-55-110 to -139

[5] Excludes account 52-55-750 (System Improvements) which is included in the capital improvement program.

Table 3-5: Capital Improvement Program

Line No.		Projected										
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	Total
Budgeted Projects												
1	Fleet Replacement	-	-	-	-	176,000	-	-	92,000	117,000	-	385,000
2	52-50-750 Improvements	214,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	100,000	1,114,000
3	52-55-710 Stream Bank Stabilization	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	300,000
4	52-55-750 System Improvements	100,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	30,000	370,000
5	-- Asset Mgmt - "Unsatisfactory" Pipe	-	132,500	132,500	132,500	132,500	132,500	-	-	-	-	662,500
6	Asset Mgmt - "Degraded" Pipe	-	-	-	67,500	-	200,000	327,300	230,000	230,000	327,300	1,382,100
7	Asset Mgmt - "Adequate" Pipe	-	-	-	-	-	-	-	-	-	-	-
8	Grand Total Capital Improvement Projects	344,000	292,500	292,500	360,000	468,500	492,500	487,300	482,000	507,000	487,300	4,213,600
Projects to be Funded through Utility Funds [1]												
9	Fleet Replacement	-	-	-	-	105,600	-	-	55,200	64,400	-	225,200
10	52-50-750 Improvements	214,000	100,000	60,000	60,000	60,000	60,000	60,000	60,000	55,000	50,000	779,000
11	52-55-710 Stream Bank Stabilization	30,000	30,000	18,000	18,000	18,000	18,000	18,000	18,000	16,500	15,000	199,500
12	52-55-750 System Improvements	100,000	30,000	18,000	18,000	18,000	18,000	18,000	18,000	16,500	15,000	269,500
13	-- Asset Mgmt - "Unsatisfactory" Pipe	-	132,500	79,500	79,500	79,500	79,500	-	-	-	-	450,500
14	-- Asset Mgmt - "Degraded" Pipe	-	-	-	40,500	-	120,000	196,400	138,000	126,500	163,700	785,100
15	-- Asset Mgmt - "Adequate" Pipe	-	-	-	-	-	-	-	-	-	-	-
16	CIP Funded Through User Charges	344,000	292,500	175,500	216,000	281,100	295,500	292,400	289,200	278,900	243,700	2,708,800
17	CIP To Be Funded through Other Sources	-	-	117,000	144,000	187,400	197,000	194,900	192,800	228,100	243,600	1,504,800
	[1] Assumed funding of CIP through utility funds:	100%	100%	60%	60%	60%	60%	60%	60%	55%	50%	

The Town anticipates a portion of the CIP will be funded through user revenues, while a portion will be funded through Other Sources. Other Sources may include existing balances, debt issuance, grant funding and Town Capital Fund transfers. Footnote [1] of Table 3-5 shows the Wastewater Utility anticipating slightly less than half of its capital projects will be funded through Other Sources in 2015 through 2022. The breakdown of assumed funding sources will be discussed more thoroughly later in this report.

3.2.2 Projected Debt Service Requirements

The Wastewater Utility does not have any outstanding debt. Based on the proposed capital plan and assumed funding availability, the Wastewater Utility does not plan to issue debt during the Study period.

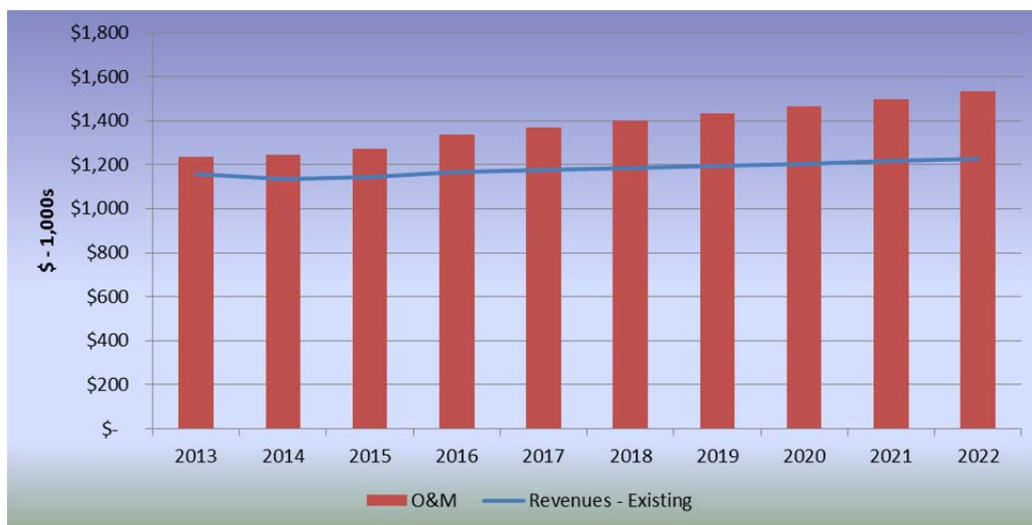
3.3 Wastewater Utility Ten-Year Financial Plan

Based on the information developed for this report, a financial plan has been assembled. This financial plan aggregates the revenues and expenses forecasted and described previously to assess the adequacy of revenues to meet all operating and capital requirements. The cash flow analysis identifies the overall increase in revenues needed to meet the Town's overall financial objectives.

3.3.1.1 Wastewater System Operating Flow of Funds

Figure 3-1 demonstrates the relationship between revenues under existing rates and the projected revenue requirements for the Wastewater Utility. As indicated in Figure 3-1, revenues in 2013 are not sufficient to meet the forecasted O&M expenses. This operating forecast is not sustainable; if forecasted costs are realized and revenues are unchanged, Wastewater Utility reserve balances will be nearly exhausted by the end of 2018.

Figure 3-1: Wastewater Utility Operating Cash Flow under Existing Rates



The following revenue increases are proposed to address the projected operating deficits of the Wastewater Utility.

Table 3-6: Proposed Wastewater Revenue Increases

Year	Proposed Revenue Increase
2014	6.0%
2015	5.0%
2016	5.0%
2017	5.0%
2018	5.0%
2019	3.0%
2020	3.0%
2021	3.0%
2022	3.0%

These adjustments will address the projected operating deficits over time and provide needed capital funding to implement the CIP. A detailed cash flow illustrating the impact of these adjustments is presented in Table 3-7.

Line 1 of Table 3-7 shows user revenues under existing rates, as shown previously on Line 9 of Table 3-3. Lines 2 through 10 of Table 3-7 present the proposed revenue increases needed to finance the Town's operating and capital costs for the planning period. Total user revenues are summarized on Line 12 of Table 3-7. Other Sewer Fund Revenue on Line 13 represents the contribution Mt. Village makes toward the Wastewater Treatment Facility. Line 14 presents Miscellaneous Revenue, the majority represented by waste hauler revenues. These revenues are anticipated to increase in 2014 as a result of rate adjustments proposed independently of this study. Line 15 shows the total operating revenues forecasted over the study period. Including proposed revenue adjustments, total Wastewater Utility operating revenues are projected to range from \$1.15 million in 2013 to \$1.59 million in 2022.

Operating revenue requirements are shown on Lines 16 through 22 of Table 3-7. O&M expenses, identified previously on Line 25 of Table 3-4, are shown on Line 16 of Table 3-7. As the Wastewater Utility does not have outstanding debt, and has no plans to issue additional debt, the debt service amounts on Lines 17 through 19 are \$0. Additionally, the Wastewater Utility does not anticipate any additional costs associated with transfer or other expenditures. Therefore amounts on Lines 20 and 21 are also \$0.

Table 3-7: Wastewater Utility Ten-Year Financial Plan

Line No.		Projected									
		2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Sewer Utility Operating Flow of Funds											
1	Revenue Under Existing Rates	788,300	790,400	792,400	794,500	796,400	798,500	800,500	802,600	804,600	806,600
Proposed Revenue Adjustments											
	<u>Year</u>	<u>Month</u>	<u>Increase</u>								
2	2014	1	6.0%	47,400	47,500	47,700	47,800	47,900	48,000	48,200	48,300
3	2015	1	5.0%		42,000	42,100	42,200	42,300	42,400	42,500	42,600
4	2016	1	5.0%			44,200	44,300	44,400	44,500	44,700	44,800
5	2017	1	5.0%				46,500	46,700	46,800	46,900	47,000
6	2018	1	5.0%					49,000	49,100	49,200	49,400
7	2019	1	3.0%						30,900	31,000	31,100
8	2020	1	3.0%							32,000	32,000
9	2021	1	3.0%								33,000
10	2022	1	3.0%								34,100
11	Total Proposed Additional Revenue	-	47,400	89,500	134,000	180,800	230,300	261,700	294,500	328,200	363,200
12	Total Sewer User Charge Revenue	788,300	837,800	881,900	928,500	977,200	1,028,800	1,062,200	1,097,100	1,132,800	1,169,800
13	Other Sewer Fund Revenue	360,400	324,700	331,700	351,400	358,900	366,600	374,600	382,800	391,100	399,700
14	Miscellaneous Revenue	9,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000	20,000
15	Grand Total Sewer Revenue	1,157,700	1,182,500	1,233,600	1,299,900	1,356,100	1,415,400	1,456,800	1,499,900	1,543,900	1,589,500
Revenue Requirements											
16	Operation and Maintenance Expense	1,234,700	1,244,600	1,273,200	1,338,200	1,368,600	1,399,900	1,432,100	1,465,000	1,498,700	1,533,200
Debt Service											
17	Existing G.O. Debt	-	-	-	-	-	-	-	-	-	-
18	Proposed Debt	-	-	-	-	-	-	-	-	-	-
19	Total Debt Service	-	-	-	-	-	-	-	-	-	-
20	Transfers to Capital	-	-	-	-	-	-	-	-	-	-
21	Other	-	-	-	-	-	-	-	-	-	-
22	Total Revenue Requirements	1,234,700	1,244,600	1,273,200	1,338,200	1,368,600	1,399,900	1,432,100	1,465,000	1,498,700	1,533,200
23	Annual Operating Balance	(77,000)	(62,100)	(39,600)	(38,300)	(12,500)	15,500	24,700	34,900	45,200	56,300
Sewer Utility Capital Flow of Funds											
Sources											
24	Tap Fees	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000	200,000
25	Transfer from Town Capital Fund	-	-	117,000	144,000	187,400	197,000	194,900	192,800	228,100	243,600
26	Transfer from Operations	-	-	-	-	-	-	-	-	-	-
27	Anticipated Grants	-	-	-	-	-	-	-	-	-	-
28	Debt Issuance	-	-	-	-	-	-	-	-	-	-
29	Total Capital Sources	200,000	200,000	317,000	344,000	387,400	397,000	394,900	392,800	428,100	443,600
Uses											
30	CIP - User Charge Funded	344,000	292,500	175,500	216,000	281,100	295,500	292,400	289,200	278,900	243,700
31	CIP - Other Funding Sources	-	-	117,000	144,000	187,400	197,000	194,900	192,800	228,100	243,600
32	Bond Issuance Expense	-	-	-	-	-	-	-	-	-	-
33	Total Capital Uses	344,000	292,500	292,500	360,000	468,500	492,500	487,300	482,000	507,000	487,300
34	Annual Capital Balance	(144,000)	(92,500)	24,500	(16,000)	(81,100)	(95,500)	(92,400)	(89,200)	(78,900)	(43,700)
Consolidated Cash Flow Results											
35	Total Revenues	1,357,700	1,382,500	1,550,600	1,643,900	1,743,500	1,812,400	1,851,700	1,892,700	1,972,000	2,033,100
36	Total Expenses	1,578,700	1,537,100	1,565,700	1,698,200	1,837,100	1,892,400	1,919,400	1,947,000	2,005,700	2,020,500
37	Annual Balance	(221,000)	(154,600)	(15,100)	(54,300)	(93,600)	(80,000)	(67,700)	(54,300)	(33,700)	12,600
38	Beginning Balance	1,355,000	1,134,000	979,400	964,300	910,000	816,400	736,400	668,700	614,400	580,700
39	Annual Balance	(221,000)	(154,600)	(15,100)	(54,300)	(93,600)	(80,000)	(67,700)	(54,300)	(33,700)	12,600
40	Ending Balance	1,134,000	979,400	964,300	910,000	816,400	736,400	668,700	614,400	580,700	593,300
41	Minimum Operating Balance [1]	504,400	506,900	513,900	530,000	537,500	545,200	553,100	561,200	569,500	578,000

[1] Based on 90 days operation and maintenance expense & allowance of \$200k for capital reserve.

Total revenue requirements are summarized on Line 23. This amount is deducted from Line 15 operating revenues to determine the annual operating balance. A negative annual operating balance indicates expenses exceed revenues, a situation that is projected to occur from 2013 through 2017 despite the proposed revenue adjustments. The cumulative effect of the proposed revenue adjustments is projected to restore the operating balance to a positive result beginning in 2018.

3.3.2 Wastewater System Capital Flow of Funds

The capital flow of funds is shown in Table 3-7 on Lines 24 through 34.

Sources of funds may include tap fees, transfers from the Town Capital Fund, transfers from utility operations, potential grants, and issuance of debt. Tap fees are currently budgeted at \$200,000 per year and are projected to remain at that level throughout the Study period. Transfers from the Town Capital Fund are shown on Line 25. No other funding source has been relied upon to fund the Wastewater CIP.

Uses of capital funds include the CIP program expenditures shown previously in Table 3-5. As no debt issuance is proposed, the forecast of issuance expense on Line 32 is projected to be \$0.

Line 34 of Table 3-7 shows the Wastewater Utility's annual capital balance. Negative amounts shown on Line 34 are funded through the use of reserves.

3.3.2.1 Consolidated Cash Flow Results

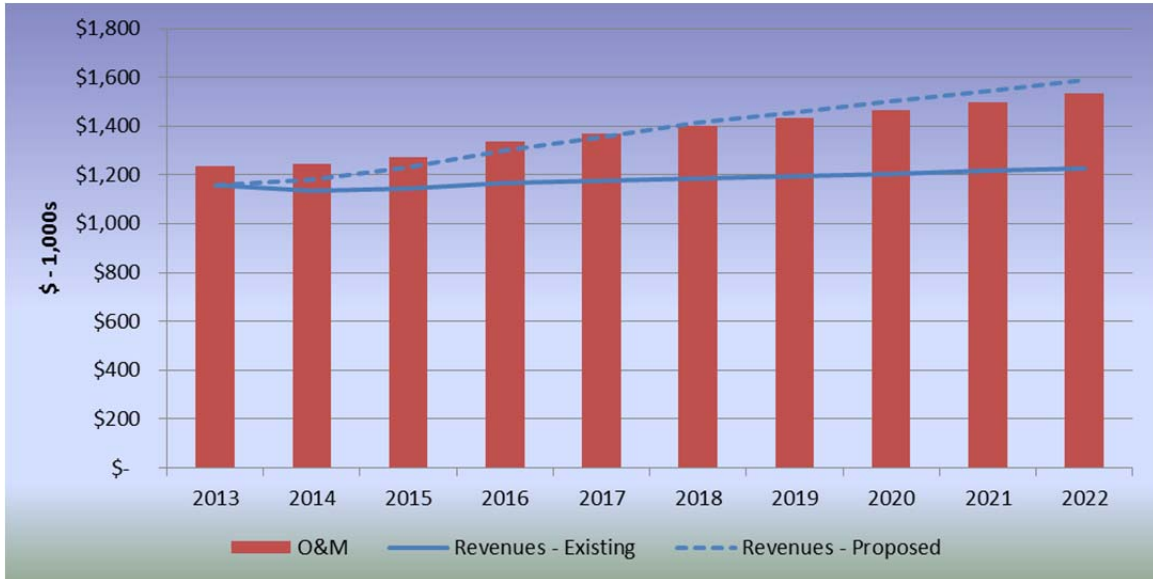
Consistent with the financial management of the utility, total operating and capital revenues are aggregated over the study period and are summarized on Line 35. These revenues are compared to the total costs which are summarized on Line 36. The total annual balance for the Wastewater Utility is represented on Line 37. Negative annual balances will draw down the utility's cash reserves, while positive annual balances will contribute to reserves.

The beginning balance available to the Wastewater Utility is shown on Line 38 and is estimated to be \$1,355,000 beginning January 1 of 2013. The available balance is projected to be drawn down over time as operating deficits are addressed and the CIP is executed.

A targeted minimum balance has been developed and is shown on Line 41. This amount is comprised of 90 days of operation and maintenance expenses, plus an additional \$200,000 for a capital projects reserve. The targeted minimum balance was developed to provide working capital liquidity and an emergency reserve to provide some protection against unforeseen events. The proposed revenue adjustments, projected Town capital transfers, and available balances are projected to meet forecasted operating and

capital expenses and provide the utility a reasonable reserve throughout the Study period. Figure 3-2 illustrates the impact of the proposed revenue adjustments.

Figure 3-2: Wastewater Utility Operating Cash Flow with Proposed Revenue Adjustments



4.0 COST OF SERVICE ANALYSIS

4.1 Introduction

The cost of service analysis is focused on determining revenue responsibility. Once the overall need for revenue increases is identified through the financial planning, the results of the cost of service analysis help answer the following question:

- "Which customer class or classes are responsible for the costs incurred to provide service?"

To determine each customer class' equitable share of the cost of providing utility service, the cost of service analysis compares the revenues received from each customer class under the existing schedule of rates with the allocated cost responsibility for that class.

The cost of service analysis was developed in the following steps:

1. Determine the net revenue requirements to be recovered from user charges.
2. Estimate the system test period units of service.
3. Allocate test period operating and capital costs.
4. Develop test period unit costs of service by class.
5. Assign the costs of service to customer classes.

To equitably develop rates for sewer service, the utility's customer classes are allocated their respective share of the total cost of service according to their use of the system. Costs are assigned through consideration of the amount of water used, strength of wastewater, customer costs, and other relevant factors. Ultimately, proposed rates must be sufficient to meet the net revenue requirements forecasted for the Wastewater Utility.

4.2 Net Revenue Requirements

As described in Section 3 of this report, the cash needs of the Wastewater Utility were projected over a ten year study period. The test period for the cost of service analysis is 2014, which corresponds to the first year for which revenue adjustments are proposed. For the sewer system, the revenue adjustment amounts to a 6% increase.

Table 4-1 summarizes the development of the net revenue requirements to be recovered from sewer rates in the 2014 test year. The net revenue requirements represent the level of costs that must be recovered from base charges and billed sewer volume under the established sewer rate schedule and are equal to total operating and capital cost expenditures less all sources of other revenue. As presented in Table 4-1,

the net operating costs are equal to \$837,800. Since the Wastewater Utility does not have any outstanding or proposed debt, the net capital costs are indicated to be \$0. Total net revenue requirements for the Wastewater Utility are therefore identical to the net operating costs, and represent a 6.0 percent increase when compared to revenues under existing sewer rates. This level of increase is consistent with the proposed adjustment presented in the Wastewater Utility Financial Plan.

Table 4-1: Wastewater Utility Test Year 2014 Cost of Service

Line No.	Description	Operating Expense \$	Capital Cost \$	Total \$
Revenue Requirements				
1	Operating Expense	1,244,600	-	1,244,600
2	Debt Service	-	-	-
3	Revenue Capital Financing	-	-	-
4	Total	1,244,600	-	1,244,600
Revenue Requirements Met from Other Sources				
5	Mt Village O&M Contribution	324,700	-	324,700
6	Other Miscellaneous Revenue	20,000	-	20,000
7	Use of / (Deposit to) Reserves	62,100	-	62,100
8	Total	406,800	-	406,800
9	Cost of Service to be met by User Charges	837,800	-	837,800
10	Revenue under Existing Rates			790,400
11	Indicated System Revenue Adjustment			6.0%

4.3 Cost of Service Methodology

According to the Water Environment Federation (WEF) publication *Financing and Charges for Wastewater Systems*, three cost allocation methodologies are generally used in the identification and allocation of wastewater utility costs. They are:

- Design-Basis Cost Allocation Methodology, whereby costs are allocated to functions based on engineering design considerations that influence the size and purpose of facilities.
- Functional Cost Allocation Methodology, whereby costs are allocated to functions based on the operational purpose of facilities rather than engineering design.
- Hybrid Approach, where in general capital costs are allocated on the design basis while operating costs are allocated on the functional basis.

For this analysis, the functional basis was followed, which aligns well with the current sewer cost structure that includes only operation and maintenance expenses.

4.4 Functional Cost Assignment

Telluride's wastewater utility system includes a variety of facilities that work in concert with one another to meet necessary service requirements. Functional costs for the Wastewater Utility included volume-related costs, strength-related costs, and customer-related costs.

Volume costs are those which vary directly with the quantity of wastewater contributed. Strength costs consist of operation and maintenance expenses incurred as a result of strength concentrations of the wastewater. The strength component is subdivided to include biochemical oxygen demand (BOD) and suspended solids. Costs assigned to these categories are influenced by the level of BOD or suspended solids in the raw wastewater.

Customer costs are those that generally vary in accordance with the quantity of customers served. Such costs typically include meter reading, billing, customer care, and related support costs.

4.4.1 Operating Expenses

Operating expenses for the sewer system are budgeted and actual expenses are recorded to reflect costs associated with wastewater treatment facilities and sewer system expenses. These costs were forecasted previously in Table 3-4 of this report. Test year 2014 operating costs are assigned to functional components in Table 4-2.

In general operation and maintenance costs were allocated based on several considerations, including:

- The cost causative or functional nature of the underlying expense. For instance, chemicals and power are typically influenced heavily by the quantity of wastewater treated.
- Directly assignable costs of sludge disposal, meter reading and customer billing.
- Town input regarding the functional purpose of certain costs.

In light of these considerations, treatment facility expenditures were allocated primarily to either volume or strength, or a combination of the two. Sewer system expenses were allocated to the volume component.

As with the Water Utility, the Wastewater Utility contributes to Town expenses through the payment of a transfer to the General Fund. Within the Wastewater Utility, this transfer has been further apportioned by the Town to the treatment facility and sewer system expense categories. In consultation with Town and Utility staff, costs were estimated for billing and meter reading functions and were allocated directly to their respective functional components. All other costs within the transfer were allocated based on the

subtotal of previously assigned costs, indicative of the general administrative support provided by Town personnel.

Table 4-2: Allocation of Operation and Maintenance Expenses

Line No.	Description	Test Year			Suspended Solids	Meter Reading	Billing
		2014 Total	Volume	BOD			
		\$	\$	\$			
<u>Treatment Facility Expenditures</u>							
1	Salaries, Wages, & Benefits	302,600	151,200	75,700	75,700	-	-
2	Chemicals/Poly/Lime	20,400	20,400	-	-	-	-
3	NPDES Permit Testing	6,100	6,100	-	-	-	-
4	Equipment Replacement	25,500	12,800	6,300	6,400	-	-
5	Sludge Disposal	14,300	-	7,100	7,200	-	-
6	Gas Heating	7,900	4,000	1,900	2,000	-	-
7	Electric Power	216,300	216,300	-	-	-	-
8	Prof/Technical Services	16,400	8,200	4,100	4,100	-	-
9	Gas & Oil	33,000	16,400	8,300	8,300	-	-
10	Transfer to Gen Fund - Admin						
11	Billing	13,900	-	-	-	-	13,900
12	Meter Reading	25,000	-	-	-	25,000	-
13	All Other	76,700	34,300	17,800	17,900	4,300	2,400
14	All Other	<u>69,600</u>	<u>31,100</u>	<u>16,200</u>	<u>16,200</u>	<u>3,900</u>	<u>2,200</u>
15	Total Treatment Facility Expenses	827,700	500,800	137,400	137,800	33,200	18,500
<u>Sewer System Expenses</u>							
16	Salaries, Wages, & Benefits	49,500	49,500	-	-	-	-
17	System O&M	35,700	35,700	-	-	-	-
18	Operating Supplies	2,000	2,000	-	-	-	-
19	Equipment Rental	6,100	6,100	-	-	-	-
20	Sidewalk Repair	1,000	1,000	-	-	-	-
21	Radio Repairs	500	500	-	-	-	-
22	Vehicle Maint & Repair	8,600	8,600	-	-	-	-
23	Utilities	4,300	4,300	-	-	-	-
24	Emergency Repairs	20,000	20,000	-	-	-	-
25	Prof Services	6,100	6,100	-	-	-	-
26	Transfer to Gen Fund - Admin						
27	Billing	34,000	-	-	-	-	34,000
28	Meter Reading	25,000	-	-	-	25,000	-
29	All Other	<u>224,100</u>	<u>113,800</u>	<u>39,300</u>	<u>39,400</u>	<u>16,600</u>	<u>15,000</u>
30	Total Sewer System Expenses	416,900	247,600	39,300	39,400	41,600	49,000
31	Total Sewer Utility O&M	1,244,600	748,400	176,700	177,200	74,800	67,500
<u>Less Other Operating Revenue</u>							
32	Mt Village O&M Contribution	324,700	196,400	53,900	54,100	13,000	7,300
33	Other Miscellaneous Revenue	20,000	12,100	2,800	2,800	1,200	1,100
34	Use of / (Deposit to) Reserves	<u>62,100</u>	<u>37,400</u>	<u>8,800</u>	<u>8,800</u>	<u>3,700</u>	<u>3,400</u>
35	Subtotal Other Operating Revenue	406,800	245,900	65,500	65,700	17,900	11,800
36	Net Sewer O&M Expense	837,800	502,500	111,200	111,500	56,900	55,700

Other operating revenues applicable to the utility operations include payments received from Mt. Village, other miscellaneous revenues, and the projected use of reserve balances in 2014. The Mt. Village

contribution relates directly to the sharing of treatment facility operating costs. As such, this source of other operating revenue is allocated on the basis of the treatment facility subtotal. The other miscellaneous revenues are allocated on the basis of total system operation and maintenance expenses. These sources of funds are deducted from operation and maintenance expenses to determine the net sewer operation and maintenance expenses by function shown on Line 36 of Table 4-2.

4.5 Units of Service

Functional costs responsibility of each customer class may be established based on the respective service requirements of each class. These service requirements are referred to as units of service and are summarized in Table 4-3.

Table 4-3: Units of Service

Line No.	Description	Billable Flow Mgal	Infiltration/Inflow		Treated Flow Mgal	Strength		Customer	
			Volume 50%	Customer 50%		BOD lbs	SS lbs.	Eq. Meters	Billed Units
1	Residential In Town	40,850	6,761	11,210	58,821	85,172	102,207	1,501	6,243
2	Commercial In Town	48,930	8,098	2,381	59,409	163,230	183,634	911	1,326
3	Out of Town	18,259	3,021	4,289	25,569	44,372	51,986	523	2,388
4	Mt. Village (a)	-	-	-	78,777	164,249	197,099	-	-
5	Total	108,039	17,880	17,880	222,575	457,024	534,926	2,935	9,958
6	Subtotal Excluding Mt. Village	108,039	17,880	17,880	143,799	292,774	337,827	2,935	9,958

(a) Estimated to be 35% of plant flow.

Wastewater treated at the plant includes both billable flow contributed by each customer and infiltration/inflow (I/I) of ground water into the sewers. Billable flow is that portion of each customer's annual water use discharged directly into the sewer system. Billable flow is based upon water billing records. The difference between flow treated at the plant and billable flow is considered infiltration/inflow. Responsibility for I/I is allocated to customer classes assuming 50 percent is distributable on a customer basis and the remaining 50 percent is distributable on a billable flow basis.

The BOD and suspended solids levels are based on estimated average strength loadings and billable flow for each class. Projected customers for Test Year 2014 are the basis for the customer-related units of service. Equivalent meter ratios reflecting the relationship of the costs to install and maintain various sized meters to a standard 5/8-inch meter provide a reasonable basis for estimating the variation in meters and services operating costs. Billing costs are allocated to classes based on the projected number of billed units.

4.6 Unit Cost Development

Based on the functionalized operation and maintenance expenses shown in Table 4-2 and the units of service developed in Table 4-3, unit costs of service for each functional cost component may be determined. Table 4-4 indicates for each functional component the unit of measure and applicable unit cost.

Table 4-4: Units Cost Development

Line No.	Description	Test Year 2014		Suspended BOD	Suspended Solids	Meter Reading	Billing
		Total	Volume				
1	Total Units of Service		143,799	292,774	337,827	2,935	9,958
2	Unit of Measure		Treated Mgal (a)	lbs (a)	lbs (a)	Eq. Meters	Billed Units
3	Net Operating Expense - \$	837,800	502,500	111,200	111,500	56,900	55,700
4	Unit Cost - \$/Unit		3.4945	0.3798	0.3301	19.3900	5.5937
5	Net Capital Costs - \$	-	-	-	-	-	-
6	Unit Cost - \$/Unit		-	-	-	-	-
7	Total Cost of Service	837,800	502,500	111,200	111,500	56,900	55,700
8	Unit Cost - \$/Unit		3.4945	0.3798	0.3301	19.3900	5.5937

(a) Excluding Mt. Village, which reimburses the Town directly for its proportionate share of treatment operating costs.

4.7 Allocation of Costs to Customer Classes

Applying the unit costs by function to each customer class' units of service allows for the distribution of costs to customer classes, as indicated in Table 4-4. Units of service for each class are as shown in Table 4-2.

After Test Year 2014 costs are assigned to customer classes, they may be compared against revenue under existing rates. This comparison provides an indication of equity in the recovery of costs through revenues under existing rates. As shown in Table 4-6, the total system adjustment is indicated to be 6 percent. Each class is indicated to share in the overall revenue adjustment.

It is important to note that cost of service results are instructive but for many reasons should not be interpreted as prescriptive in the development of proposed rates. Section 5 will discuss proposed rates for the Wastewater Utility.

Table 4-5: Allocation of Costs to Customer Classes

Line No.	Description	Test Year 2014					Billing
		Total	Volume	BOD	Suspended Solids	Meter Reading	
1	Unit Cost of Service - \$/Unit		\$ 3.4945	\$ 0.3798	\$ 0.3301	\$ 19.3900	\$ 5.5937
Residential In Town							
2	Units of Service		58,821	85,172	102,207	1,501	6,243
3	Allocated Cost - \$	335,800	205,600	32,300	33,700	29,200	35,000
Commercial In Town							
4	Units of Service		59,409	163,230	183,634	911	1,326
5	Allocated Cost - \$	355,300	207,600	62,000	60,600	17,700	7,400
Out of Town							
6	Units of Service		25,569	44,372	51,986	523	2,388
7	Allocated Cost - \$	146,900	89,300	16,800	17,300	10,100	13,400
8	Total Units of Service		143,799	292,774	337,827	2,935	9,958
9	Total Cost of Service	838,000	502,500	111,100	111,600	57,000	55,800

Table 4-6: Comparison of Revenues under Existing Rates to Allocated Cost of Service

Line No.	Description	Revenue Under Existing Rates	Total Allocated Cost of Service	Indicated Increase / (Decrease)	Indicated Increase / (Decrease)
		\$	\$	\$	%
1	Residential In Town	299,600	335,800	36,200	12.1%
2	Commercial In Town	337,100	355,300	18,200	5.4%
3	Out of Town	137,300	146,900	9,600	7.0%
4	Subtotal	774,000	838,000	64,000	8.3%
5	Surcharge Revenues (a)	16,400	-		
6	Total	790,400	838,000	47,600	6.0%

(a) Reflects debt surcharge paid by Hillside and Aldasoro for recovery of utility debt costs not paid in those service areas through taxes.

5.0 PROPOSED RATE DESIGN

5.1 Introduction

The primary focus of Step 3, Rate Design is the examination of revenue recovery. Generally speaking, the objective is to design rates for the utility to achieve the following:

- Generate adequate revenues to meet the projected operating and capital costs, while maintaining sound financial performance.
- Provide revenue stability.
- Provide cost recovery that is reasonably commensurate with the cost of providing service.

Additionally, the Town wished to explore the development of residential rates that reflected certain size and deed restrictions.

5.2 Existing Wastewater Rates

The existing schedule of wastewater rates, which was shown previously in Table 3-2, became effective January 1, 2012. The rate schedule is comprised of a fixed bi-monthly base fee and a minimum usage allowance that varies according to class and meter size. For In-Town Residential accounts, there are no additional volume-related fees. For In-Town Commercial accounts, the current flat rate of \$5.25 per Mgal is assessed for all volume that exceeds the minimum for each meter size. Out of Town customers rates are 125 percent of the In Town rates. Additionally, certain Out of Town areas include a debt service surcharge as an additional component of their base fee.

5.3 Proposed Wastewater Rates

It is important to acknowledge that cost of service studies are the result of engineering and professional estimates, based to an extent on judgment and experience. Therefore cost of service results should be interpreted as instructive in the development of proposed rates but not as a literal prescription for rate design. Past utility rate practice, contractual agreements, financial impact on customers, and local policy direction are among the factors to be considered in the development of proposed rates beyond cost of service results.

The existing rate structure was considered to be serving the Wastewater Utility appropriately based on the following considerations.

- **Revenue stability:** The base fee/minimum bill provides a reliable revenue source, especially in consideration of the seasonal occupancy of second homes in the service area.
- **Fixed cost coverage:** The majority of Wastewater Utility costs are fixed, meaning they do not vary proportionately with the volume of wastewater treated. The high fixed nature of utility costs reasonably aligns with the existing rate structure's minimum bill design.
- **Ease of explanation:** The existing rate structure has been in effect for a considerable amount of time and is familiar to both customers and Town staff.

Based on these considerations no material changes are proposed to the existing rate structure. However, an additional rate is proposed to address the Town's goals and objectives for wastewater rate design.

Proposed wastewater rates are shown in Table 5-1 and are assumed to be effective on January 1, 2014.

5.3.1 New Wastewater Rate Components

As a part of the study effort, the Town wanted to consider specific rate development for size and deed restricted Residential accounts.

The Town currently has about 45 Residential accounts that are deed restricted and occupy 850 square feet or less. These accounts include Residential customers both in and out of Town. As a matter of policy the Town has considered adopting a lower base fee for size and deed restricted Residential accounts.

Proposed rates have been developed to assess a lower base fee for size and deed restricted Residential accounts.

5.3.2 Typical Bills and Regional Comparison

A comparison of typical monthly wastewater bills under existing and proposed rates is shown in Table 5-2. Typical bills are calculated for various Residential and Commercial customer profiles. As shown in Table 5-2, the monthly wastewater bill for an average residential customer will increase \$1.52 per month.

A comparison of monthly Residential typical bills from other regional wastewater utilities was also conducted and is shown in Figure 5-1. Under existing rates, the typical Telluride residential bill is indicated to be in the middle of the range of this regional comparison. Under proposed rates, the position of Telluride's typical residential bill remains in the middle of the regional comparison, while Telluride's new size and deed restricted residential bill is on the low end of the sampled utilities.

Overall, the comparison shown in Figure 5-1 indicates that the typical residential wastewater bill under proposed rates is competitively positioned among regional wastewater utilities.

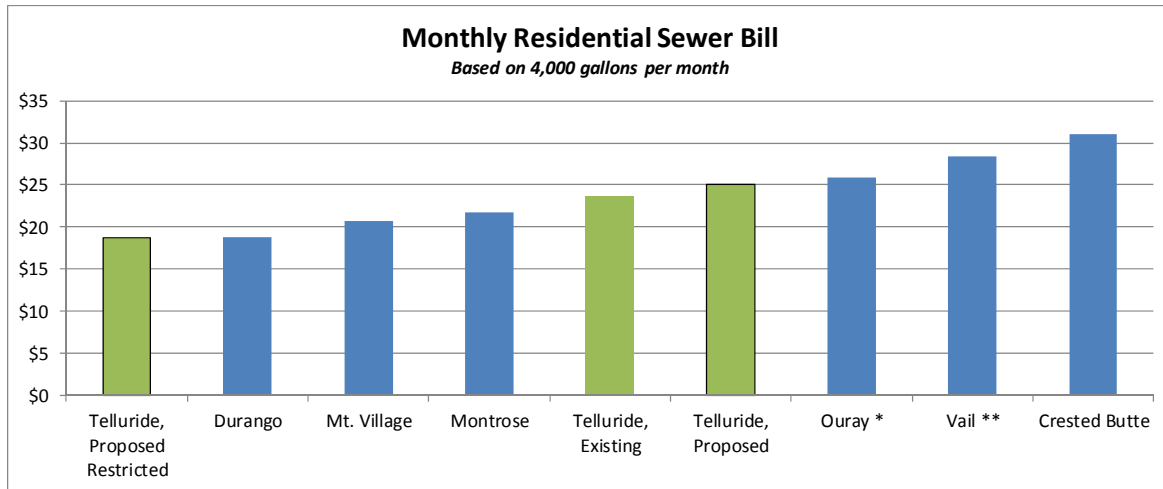
Table 5-1: Existing and Proposed 2014 Wastewater Rates

Line No.	Description	Base Fee		Volume Charge		
		Total Existing \$/bill	Total Proposed \$/bill	Minimum Allowance Mgal	Existing > Min \$/Mgal	Proposed > Min \$/Mgal
1	Residential	\$ 47.21	\$ 50.25	n/a	\$ -	\$ -
2	Residential, Restricted	\$ -	\$ 37.50			
Commercial						
3	5/8"	\$ 47.21	\$ 50.25	8	\$ 5.25	\$ 5.65
4	3/4"	\$ 70.80	\$ 75.23	12	\$ 5.25	\$ 5.65
5	1"	\$ 94.41	\$ 100.40	16	\$ 5.25	\$ 5.65
6	1.5"	\$ 188.81	\$ 200.71	32	\$ 5.25	\$ 5.65
7	2"	\$ 283.22	\$ 301.11	48	\$ 5.25	\$ 5.65
8	3"	\$ 424.83	\$ 451.67	72	\$ 5.25	\$ 5.65
9	4"	\$ 566.44	\$ 602.23	96	\$ 5.25	\$ 5.65
10	Residential - Out of Town	\$ 59.01	\$ 62.81	n/a	\$ -	\$ -
Commercial - Out of Town						
11	5/8"	\$ 59.01	\$ 62.81	8	\$ 6.56	\$ 7.06
12	3/4"	\$ 88.50	\$ 94.04	12	\$ 6.56	\$ 7.06
13	1"	\$ 118.01	\$ 125.50	16	\$ 6.56	\$ 7.06
14	1.5"	\$ 236.01	\$ 250.89	32	\$ 6.56	\$ 7.06
15	2"	\$ 354.03	\$ 376.39	48	\$ 6.56	\$ 7.06
16	3"	\$ 531.04	\$ 564.59	72	\$ 6.56	\$ 7.06
17	4"	\$ 708.05	\$ 752.79	96	\$ 6.56	\$ 7.06
Commercial - Hillside						
18	5/8"	\$ 76.78	\$ 80.58	8	\$ 6.56	\$ 7.06
19	3/4"	\$ 106.27	\$ 111.81	12	\$ 6.56	\$ 7.06
20	1"	\$ 135.78	\$ 143.27	16	\$ 6.56	\$ 7.06
21	1.5"	\$ 253.78	\$ 268.66	32	\$ 6.56	\$ 7.06
22	2"	\$ 371.80	\$ 394.16	48	\$ 6.56	\$ 7.06
23	3"	\$ 548.81	\$ 582.36	72	\$ 6.56	\$ 7.06
24	4"	\$ 725.82	\$ 770.56	96	\$ 6.56	\$ 7.06
25	Hillside	\$ 76.78	\$ 80.58	n/a	\$ -	\$ -
26	Lawson	\$ 59.01	\$ 62.81	n/a	\$ -	\$ -
27	Aldasoro	\$ 76.78	\$ 80.58	n/a	\$ -	\$ -

Table 5-2: Typical Wastewater Bills

Line No.	Description	Billable Flow Mgal	Monthly Bill		Proposed Increase / (Decrease)		
			Under Existing Rates \$	Under Proposed Rates \$	\$	%	
Residential In Town							
1	Deed and Sq Ft Restricted	1.5	\$ 23.61	\$ 18.75	\$ (4.86)	-20.6%	
2	All Other	3.0	\$ 23.61	\$ 25.13	\$ 1.52	6.4%	
Commercial 5/8" In Town							
3	Low	3.0	\$ 23.61	\$ 25.13	\$ 1.52	6.4%	
4	Medium	5.5	\$ 31.48	\$ 33.60	\$ 2.12	6.7%	
5	High	10.0	\$ 55.11	\$ 59.03	\$ 3.92	7.1%	
6	Average Commercial 2" In Town	38.0	\$ 215.11	\$ 229.66	\$ 14.55	6.8%	
7	Average Commercial 4" In Town	54.5	\$ 317.35	\$ 337.84	\$ 20.49	6.5%	

Figure 5-1: Regional Residential Wastewater Bill Comparison



* Excludes service fees

** Service provided by Eagle River Water & Sanitation District



Burns & McDonnell World Headquarters
9400 Ward Parkway
Kansas City, MO 64114
Phone: 816-333-9400
Fax: 816-333-3690
www.burnsmcd.com

Burns & McDonnell: Making our clients successful for more than 100 years