WASTEWATER UTILITY FINANCIAL PLAN AND RATE STUDY

CITY OF WHITEFISH, MT | MARCH 2016

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City of Whitefish

Executive Summary – Wastewater

In May 2015, the City of Whitefish (City) retained AE2S to complete a Water and Wastewater Financial Plan and Rate Structure Study (Study). The completion of a comprehensive rate study is typically recommended every three (3) to five (5) years unless triggered by a major change to Utility operations or if significant capital improvements are planned. In line with these recommendations, the City initiated this Study for the following reasons:

- Greater than 10 years have passed since a comprehensive review of the water rates was completed and greater than 5 years have passed since wastewater rates were last comprehensively evaluated. The wastewater rates were last reviewed in 2009.
- The City desired a review of the equitability associated with current rates charged to different water service and wastewater service zones.
- The City is in the process of planning for a new wastewater treatment plant, which is expected to be commissioned in 2021. Based on preliminary engineering estimates for the facility, new debt associated with this facility is anticipated to be in the range of $15 million to $20 million.

The City of Whitefish provides wastewater service to approximately 3,530 customer accounts within City limits and 106 customer accounts located outside of City limits. Current policy requires that new users located outside of City limits are not eligible for connection unless annexation occurs. The City operates an extensive network of collection system gravity mains, forcemains, and lift stations. In addition, the City receives wastewater from areas with centralized septic-tank-effluent-pump (STEP) systems and Grinder systems that have additional service requirements. Certain areas within the collection system require significant pumping to convey the wastewater across the City to the wastewater treatment plant (WWTP). To address costs attributable to the various user types and service zones, the City's Wastewater rate schedule distinguishes between three different service classes in addition to the dedicated rates associated with providing service to Grinder and STEP users:

- Service Class 1 (SC-1): areas in which wastewater is conveyed by gravity pipelines to the main lift station, and is then pumped to the WWTP. Wastewater associated with users in SC-1 is pumped one time (1X);
- Service Class 2 (SC-2): areas in which wastewater is pumped by an intermediate pump station prior to the main lift station, where it is then pumped to the WWTP. In general, wastewater associated with users in SC-2 is pumped two times (2X);
- Service Class 3 (SC-3): areas in which wastewater is pumped either once or twice by an intermediate pump station prior to get to the main lift station, where it is then pumped to the WWTP. In general, wastewater associated with users in SC-3 is pumped a minimum of two times, and sometimes three times (2-3X) depending upon location.

The Wastewater rate schedule includes a monthly fixed component based on location and service type (i.e. SC1, SC2, SC3, Grinder, or STEP) and a volumetric component also based on location and service type that is charged per 1,000 gallons of winter water use. Tables ES.1 and ES.2 summarize the current volumetric and base rate structures, respectively, for the Wastewater Utility. In 2007, the City adopted a policy whereby the Wastewater rates can be increased annually, if necessary, by the US Department of Labor's Water, Sewer and Trash Collection Services Consumer Price Index for All Urban Consumers. For Fiscal Year 2016 (FY16), the Wastewater rates were increased by 2.3 percent.

User Class	2016 Rate $/thousand gallons
Inside City Users	
SC-1	$3.55
SC-2	$6.31
SC-3	$8.86
Grinder	$13.47
STEP	$16.65
Outside City Users	
SC-1	$5.46
SC-2	$8.71
SC-3	$10.54
Resthaven	$21.47
Big Mountain	$8.71

Table ES.1: 2016 Volumetric Wastewater Rate Structure

User Class	2016 Monthly Base Rate	2016 Monthly Base Rate - Discounted
Inside City Users		
SC-1	$21.17	$5.29
SC-2	$37.02	$9.27
SC-3	$43.17	$10.79
Grinder	$53.94	$13.49
STEP	$56.07	$14.03
Outside City Users		
SC-1	$24.73	--
SC-2	$41.48	--
SC-3	$47.58	--
Resthaven	$60.18	--
Big Mountain	$72.58	--

Table ES.2: 2016 Monthly Wastewater Base Rate Structure

The City of Whitefish adopted a policy in 2006 that provides a 75 percent discount on the base (fixed) portion of the wastewater bill to low income customers that receive assistance from the Montana Department of Public Health and Human Services, and also to Senior Citizens age 65 and over.

Cost of Service Analysis

To evaluate the equitability of the existing rate structure, a Cost of Service Analysis (COSA) was completed to measure the cost attributable to each user class against the amount of revenue provided by each user class. The COSA comparison is made based on cost and revenue percentages calculated for a representative Test Year. For the purpose of this analysis, FY16 budget and capital expenditures were used as the basis for the Test Year. To develop Test Year revenue projections, the number of accounts and billed flow for calendar year 2014 were escalated to 2016. The FY16 Wastewater rates were then applied to the account and flow figures to develop Test Year revenues. Total Test Year 2016 revenue requirements are shown in Table ES.3.

Revenue Requirement	Test Year 2016
O&M-Related	$1,887,877
Capital-Related	$1,005,865
Total Revenue Requirements	**$2,893,742**

Table ES.3: Summary of Test Year 2016 Revenue Requirements

During the development of the COSA assumptions, significant effort was spent evaluating the service zone classifications. Input from City staff indicated that the SC-3 areas were primarily associated with high-cost pumping facilities with a small user base. It was further noted that some of these facilities are in developing areas that with growth, will more closely resemble an SC-2 service area in the future. Based on this discussion and input from Council members in a Study Work Session, a revision to the approach to the Service Classes was made as part of the COSA, shown in Figure ES.1. The COSA results, which reflect the revised approach, are shown in Table ES.4. The COSA results were used to develop a recommended rate approach that would work to bring COSA percent difference percentages in line through the 2017 to 2026 planning period.

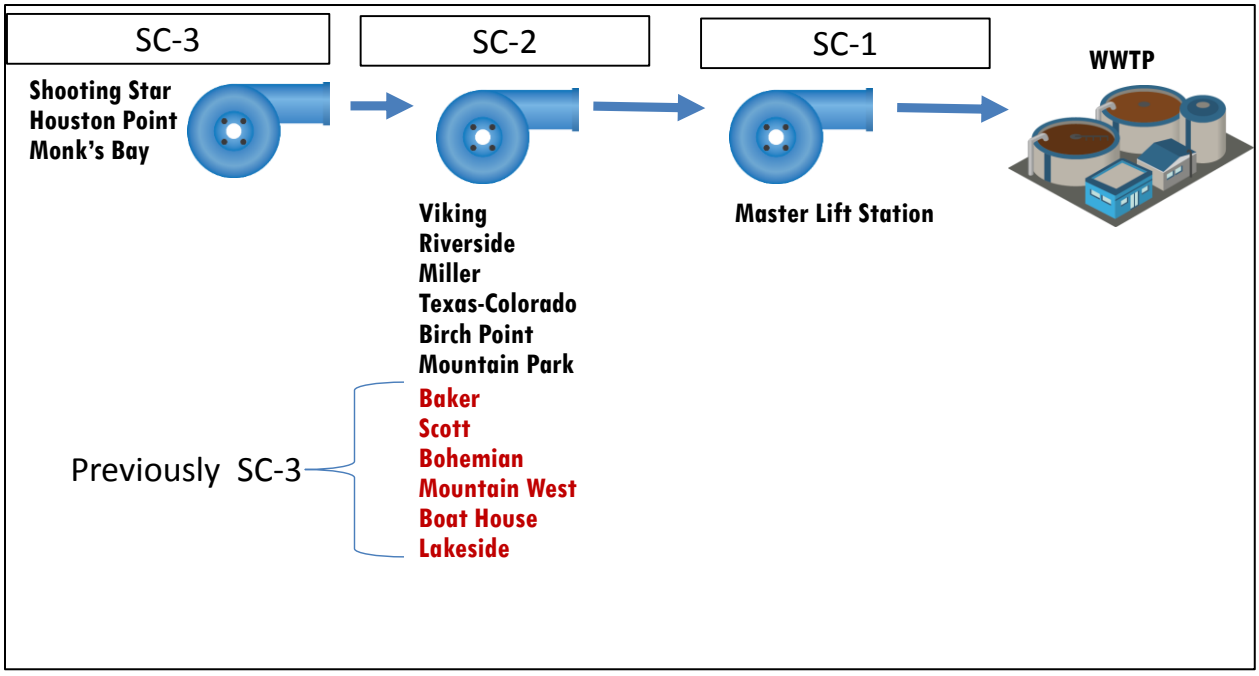

Figure ES.1: Revised Service Class Approach

User Class	Test Year 2016		
	Cost Percentage	Revenue Percentage	% Difference
Inside City Users			
SC-1	48.5%	43.7%	-9.9%
SC-2	35.3%	40.1%	13.7%
SC-3	2.9%	3.0%	5.7%
Grinder	1.4%	1.5%	3.7%
STEP	1.0%	0.9%	-9.1%
Outside City Users			
SC-1	0.6%	0.6%	-1.2%
SC-2	0.9%	1.2%	26.0%
SC-3	--	--	--
Resthaven	3.1%	2.8%	-9.3%
Big Mountain	6.5%	2.4%	-1.3%
Total	100%	100%	

Table ES.4: Test Year 2016 Cost of Service Analysis Results

Given a typically recommended COSA target difference of ±10%, the detailed COSA results generally showed that based on the assumptions utilized, the revenues associated with each user class are generally in line with the cost. It does appear that the SC-2 user class is generating revenue at a higher percentage than its associated cost, and that the SC-1, STEP, and Resthaven user classes are generating revenue at a percentage less than the associated cost.

Correction of potential cost of service disparities were addressed in the rate design and revenue adequacy portions of the Study. It should be noted that Montana Law specifies that rate increases applied to users outside of City limits cannot exceed those applied to similar users located within City limits. As a result, the City has limited ability to correct cost of service disparities associated with outside users.

Findings and Recommendations

The COSA results identified potential slight inequities within the existing rate structure. Because the City will be bringing on a significant new facility within the planning period, it is important to note that the COSA relationships will change when the rate base changes. As a result, recommended rate adjustments throughout the planning period take into account anticipated annual shifts in the COSA across the evaluated period.

To address cost of service inequities, support the funding of target reserve levels, and achieve overall revenue adequacy for the Wastewater Utility, rate adjustments for the period of 2017 through 2026 were projected. Using the Test Year 2016 as the basis, revenue requirements were indexed to reflect inflationary effects and billed wastewater volumes and accounts were adjusted to reflect average increase in the user base over the past five years. Tables ES.5/ES.6 and ES.7/ES.8 summarize the projected monthly base and volumetric rates, respectively, for 2017 through 2026. Tables ES.9 and ES.10 summarize the projected revenue requirements, revenues, and overall revenue adequacy for the study period. Figure ES.2 projects the future cash balances associated with the information presented in Tables ES.5 through ES.10.

User Class	2016 Rates	2017 Recommended	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Inside City Users						
SC-1	$21.17	$21.81	$22.46	$23.13	$23.82	$24.53
SC-2	$37.02	$38.13	$39.27	$40.45	$41.66	$42.91
SC-3	$43.17	$44.47	$45.80	$47.17	$48.59	$50.05
Grinder	$53.94	$55.56	$57.23	$58.95	$60.72	$62.54
STEP	$56.07	$57.75	$59.48	$61.26	$63.10	$64.99
Outside City Users						
SC-1	$24.73	$25.47	$26.23	$27.02	$27.83	$28.66
SC-2	$41.48	$42.72	$44.00	$45.32	$46.68	$48.08
SC-3	$47.58	$49.01	$50.48	$51.99	$53.55	$55.16
Resthaven	$60.18	$61.99	$63.85	$65.77	$67.74	$69.77
Big Mountain	$72.58	$74.76	$77.00	$79.31	$81.69	$84.14

Table ES.5: Wastewater Utility Monthly Base Rate Projections – 2017-2021

User Class	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected
Inside City Users					
SC-1	$25.27	$26.03	$26.81	$27.61	$28.44
SC-2	$44.20	$45.53	$46.90	$48.31	$49.76
SC-3	$51.55	$53.10	$54.69	$56.33	$58.02
Grinder	$64.42	$66.35	$68.34	$70.39	$72.50
STEP	$66.94	$68.95	$71.02	$73.15	$75.34
Outside City Users					
SC-1	$29.52	$30.41	$31.32	$32.26	$33.23
SC-2	$49.52	$51.01	$52.54	$54.12	$55.74
SC-3	$56.81	$58.51	$60.27	$62.08	$63.94
Resthaven	$71.86	$74.02	$76.24	$78.53	$80.89
Big Mountain	$86.66	$89.26	$91.94	$94.70	$97.54

Table ES.6: Wastewater Utility Monthly Base Rate Projections – 2022-2026

User Class	2016 Rates	2017 Recommended	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Inside City Users						
SC-1	$3.55	$4.44	$5.55	$6.94	$8.40	$10.16
SC-2	$6.31	$7.07	$7.92	$8.87	$9.93	$11.12
SC-3	$8.86	$9.92	$10.91	$12.00	$13.20	$14.52
Grinder	$13.47	$14.55	$15.71	$16.97	$18.33	$19.80
STEP	$16.65	$18.32	$20.15	$21.36	$22.64	$24.00
Outside City Users						
SC-1	$5.46	$6.83	$8.54	$10.68	$12.92	$15.63
SC-2	$8.71	$9.76	$10.93	$12.24	$13.71	$15.36
SC-3	$10.54	$11.80	$12.98	$14.28	$15.71	$17.28
Resthaven	$21.47	$23.62	$25.98	$27.54	$29.19	$30.94
Big Mountain	$8.71	$9.76	$10.93	$12.02	$13.22	$14.54

Table ES.7: Wastewater Utility Volumetric Rate Projections – 2017-2021

User Class	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected
Inside City Users					
SC-1	$10.36	$10.57	$10.78	$11.00	$11.22
SC-2	$11.34	$11.57	$11.80	$12.04	$12.28
SC-3	$15.39	$16.01	$16.65	$17.32	$18.01
Grinder	$20.99	$21.62	$22.27	$22.94	$23.63
STEP	$25.44	$26.97	$28.59	$28.59	$28.59
Outside City Users					
SC-1	$15.63	$15.63	$15.63	$15.63	$15.63
SC-2	$15.67	$15.98	$16.30	$16.63	$16.96
SC-3	$18.32	$19.05	$19.81	$20.60	$21.42
Resthaven	$32.80	$34.77	$36.86	$36.86	$36.86
Big Mountain	$15.41	$16.03	$16.67	$16.67	$16.67

Table ES.8: Wastewater Utility Volumetric Rate Projections – 2022-2026

	2016	2017	2018	2019	2020	2021
Projected Revenue Requirements						
O&M	$1,887,877	$1,945,860	$2,005,873	$2,067,994	$2,132,301	$2,673,253
Capital (Cash-Funded)	$1,190,250	$775,000	$429,000	$138,500	$180,900	$400,000
Capital (Debt-Funded)	$2,190,527	$0	$0	$19,587,500	$0	$0
Debt Service	$250,541	$338,976	$333,017	$336,197	$1,678,455	$1,679,249
Future WWTP Capital Reserve	$0	$335,324	$670,649	$1,005,973	$0	$0
Total Revenue Requirements	**$5,519,195**	**$3,395,160**	**$3,438,539**	**$23,136,163**	**$3,991,656**	**$4,752,502**
Projected Income and Funds from Other Sources						
Loan Proceeds	$2,190,527	$0	$0	$19,587,500	$0	$0
Other Revenue	$498,000	$560,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$2,830,668	$2,834,660	$3,218,039	$3,328,163	$3,771,156	$4,532,002
Projected Revenue from Rates	**$2,436,156**	**$2,714,483**	**$3,041,090**	**$3,422,787**	**$3,831,790**	**$4,308,042**
Revenue Surplus/(Deficiency)	($394,511)	($120,178)	($176,948)	$94,624	$60,634	($223,960)

Table ES.9: Projected Wastewater Utility Revenue Adequacy – 2017-2021

	2022	2023	2024	2025	2026
Projected Revenue Requirements					
O&M	$2,760,137	$2,850,007	$2,942,974	$3,039,154	$3,138,666
Capital (Cash-Funded)	$400,000	$400,000	$400,000	$400,000	$400,000
Capital (Debt-Funded)	$0	$0	$0	$0	$0
Debt Service	$1,674,901	$1,668,177	$1,664,930	$1,663,373	$1,665,700
Future WWTP Capital Reserve	$0	$0	$0	$0	$0
Total Revenue Requirements	**$4,835,038**	**$4,918,184**	**$5,007,904**	**$5,102,527**	**$5,204,366**
Projected Income and Funds from Other Sources					
Loan Proceeds	$0	$0	$0	$0	$0
Other Revenue	$220,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$4,614,538	$4,697,684	$4,787,404	$4,882,027	$4,983,866
Projected Revenue from Rates	**$4,452,243**	**$4,595,802**	**$4,743,134**	**$4,880,527**	**$5,021,372**
Revenue Surplus/(Deficiency)	($162,294)	($101,882)	($44,270)	($1,501)	$37,506

Table ES.10: Projected Wastewater Utility Revenue Adequacy – 2022-2026

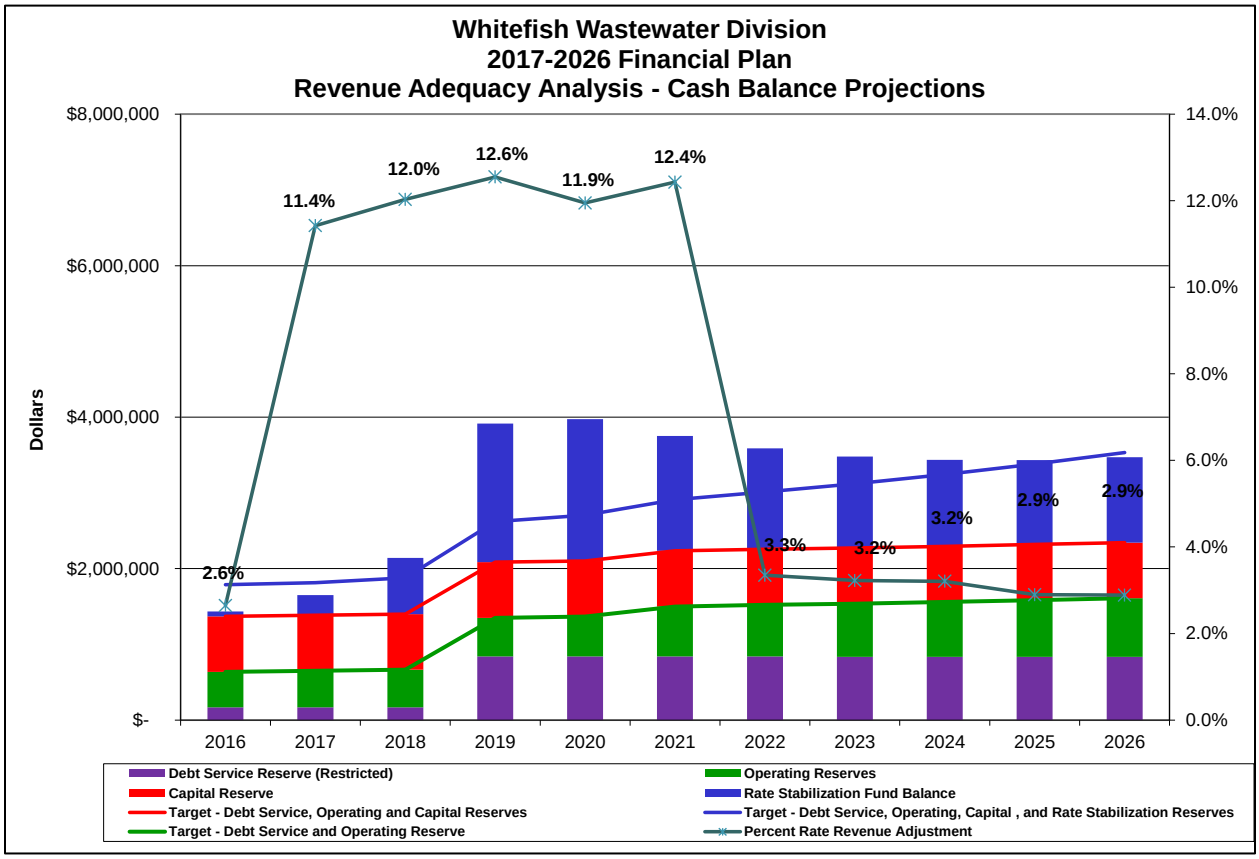

Figure ES.2: Wastewater Utility Cash Balance Projections – Rate Adjustment Scenario

Based on the COSA, rate design, and revenue adequacy analyses completed within this project, the following recommendations are offered for the Wastewater Utility:

- **Adopt a revised approach to the Service Classes.** Based on discussions with City Staff and Council Members, it is recommended that the City revise the lift station classifications as shown in Figure ES.1. The COSA completed as part of this study followed this approach.
- **Implement near-term adjustments to prepare the Utility for debt associated with the new WWTP.** By gradually increasing revenue requirements with the goal of generating adequate revenue to meet debt service and coverage requirements by 2020, the City can show a proactive approach to managing Utility finances. In the interim, reserve funds can be built that can potentially minimize necessary future rate increase, provided that coverage can be met at that time.
- **Closely monitor coverage as the new debt service comes online.** The required coverage associated with debt for the new WWTP will require rate increases beyond what is necessary to simply meet the debt payment.
- **Strive to correct cost of service inequities as adjustments are made to meet annual revenue requirements.** By implementing the recommended changes to the wastewater rates, the City will be making an effort to rectify any existing cost of service inequities. By updating usage characteristics, revenue requirements, and asset values on an annual basis, the model will make adjustments to the COSA relationships. This will be important when the new WWTP facility comes online. The model is currently set up based on projected asset values.
- **Link annual Outside user rate adjustments to adjustments to Inside user rates.** It is recommended that City continue to adjust rates to Outside users consistent with those to Inside users. Due to the relatively small number of Outside users, it is very difficult to correct any cost of service disparity.
- **Review Wastewater Revenue Adequacy annually.** The City of Whitefish has undertaken this project to develop a financial tool to assist in managing the financial health of the Wastewater Utility. Although the projections herein contain proposed rate adjustments through 2026, a change in actual revenues or expenses from those projected could significantly impact the Utility. As a result, it is strongly recommended that the City closely monitor revenues and expenses as compared to those projected in the rate model, making adjustments as necessary, and update the projected rate adjustments based on the desired objective of achieving consistent revenue adequacy and meeting cash reserve target balances.

- **Continue pursuit of grant dollars for construction of the new WWTP.** The City is actively exploring potential grant funds for the WWTP construction. As grant dollars are acquired, future projections can be adjusted to reflect reduced revenue requirements.
- **Monitor near-term revenue stability.** As the City implements rate increases designed to meet future debt service requirements, there is the potential for some users to decrease water use in an overall effort to lower the utility bill. Therefore, the City should closely monitor revenue stability associated with these multi-year changes.
- **Establish Target Levels and Fund Operating Reserves.** In addition to Debt Service reserves required by bond covenants, it is recommended that the City strive to achieve and maintain the following reserve levels:
    - Operating Reserves: Target = 90 days of operating expenses
    - Capital Reserve: Target = 15 percent of average annual cash-funded capital expenditures
    - Rate Stabilization: Target = 15 percent of annual rate revenue.
- **Continue the policy of rate indexing as a minimum annual adjustment.** Although future rate adjustment projections contained herein are, for some user classes, less than average inflation, it is recommended that the City maintain its rate indexing policy, even though it is likely with an up-to-date financial model that in most years the City will be able to specifically dial in the necessary percentage.
- **Revise the existing Low Income/Senior Discount Policy.** It is recommended that the City revise its policy to require income-based qualification through the LIEAP to receive the discounted Utility rates.
- **Proactively communicate changes to the rate structure and increases to the periodic utility bills to the public.** It is recommended that once the City has approved Utility rates for 2017, it continue its proactive community outreach program to educate customers as to the new rates and rate impacts. It is suggested that outreach efforts involve information on the City website, press releases, and mailings. Table ES.11 presents the monthly change in dollar amount associated with wastewater rate projections. The change is compared to the monthly charge for the amount of wastewater listed in the second column. The calculation has been completed for each year, with reference back to FY16 charges for service. Therefore, the monthly increase in the last column represents the projected monthly increase in

2026 as compared to the monthly charge in 2016. Table ES.12 presents the same information in percentage format.

It is important to remember that the cost of service is a one-time snapshot of cost causation associated with users of the Utility. Setting rates for one to five years based on a cost of service analysis utilizing a Test Year costs and usage characteristics is a generally accepted practice. Corrections are then made periodically as COSA assumptions are updated. It is becoming more common to incorporate COSA into annual rate setting, which has been done for this project. This approach should help the City to adjust more quickly to changes in how the Utility is operated and how users are driving cost, thereby managing rate equitability on an on-going basis.

	Avg Monthly Gallons	Existing Bill FY16	2017 Monthly Increase from 2016	2018 Monthly Increase from 2016	2019 Monthly Increase from 2016	2020 Monthly Increase from 2016	2021 Monthly Increase from 2016	2022 Monthly Increase from 2016	2023 Monthly Increase from 2016	2024 Monthly Increase from 2016	2025 Monthly Increase from 2016	2026 Monthly Increase from 2016
SC-1												
Inside	3,000	$ 31.82	$ 3.31	$ 7.29	$ 12.13	$ 17.20	$ 23.19	$ 24.53	$ 25.92	$ 27.33	$ 28.79	$ 30.28
Inside Low Income	3,000	$ 15.94	$ 2.83	$ 6.32	$ 10.66	$ 15.21	$ 20.67	$ 21.45	$ 22.27	$ 23.10	$ 23.96	$ 24.83
Outside	3,000	$ 41.11	$ 4.85	$ 10.74	$ 17.95	$ 25.48	$ 34.44	$ 35.30	$ 36.19	$ 37.10	$ 38.04	$ 39.01
Inside	6,000	$ 42.47	$ 5.98	$ 13.29	$ 22.30	$ 31.75	$ 43.02	$ 44.96	$ 46.98	$ 49.02	$ 51.14	$ 53.29
Inside Low Income	6,000	$ 26.59	$ 5.50	$ 12.32	$ 20.83	$ 29.76	$ 40.50	$ 41.88	$ 43.33	$ 44.79	$ 46.31	$ 47.84
Outside	6,000	$ 57.49	$ 8.96	$ 19.98	$ 33.61	$ 47.86	$ 64.95	$ 65.81	$ 66.70	$ 67.61	$ 68.55	$ 69.52
SC-2												
Inside	3,000	$ 55.95	$ 3.39	$ 7.08	$ 11.11	$ 15.50	$ 20.32	$ 22.27	$ 24.29	$ 26.35	$ 28.48	$ 30.65
Inside Low Income	3,000	$ 28.20	$ 2.56	$ 5.40	$ 8.55	$ 12.03	$ 15.91	$ 16.89	$ 17.91	$ 18.94	$ 20.01	$ 21.09
Outside	3,000	$ 67.61	$ 4.39	$ 9.18	$ 14.43	$ 20.20	$ 26.55	$ 28.92	$ 31.34	$ 33.83	$ 36.40	$ 39.01
Inside	6,000	$ 74.88	$ 5.67	$ 11.91	$ 18.79	$ 26.36	$ 34.75	$ 37.36	$ 40.07	$ 42.82	$ 45.67	$ 48.56
Inside Low Income	6,000	$ 47.13	$ 4.84	$ 10.23	$ 16.23	$ 22.89	$ 30.34	$ 31.98	$ 33.69	$ 35.41	$ 37.20	$ 39.00
Outside	6,000	$ 93.74	$ 7.54	$ 15.84	$ 25.02	$ 35.20	$ 46.50	$ 49.80	$ 53.15	$ 56.60	$ 60.16	$ 63.76
SC-3												
Inside	3,000	$ 69.75	$ 4.48	$ 8.78	$ 13.42	$ 18.44	$ 23.86	$ 27.97	$ 31.38	$ 34.89	$ 38.54	$ 42.30
Inside Low Income	3,000	$ 37.37	$ 3.50	$ 6.80	$ 10.41	$ 14.36	$ 18.68	$ 21.66	$ 23.91	$ 26.23	$ 28.65	$ 31.14
Inside	6,000	$ 96.33	$ 7.66	$ 14.93	$ 22.84	$ 31.46	$ 40.84	$ 47.56	$ 52.83	$ 58.26	$ 63.92	$ 69.75
Inside Low Income	6,000	$ 63.95	$ 6.68	$ 12.95	$ 19.83	$ 27.38	$ 35.66	$ 41.25	$ 45.36	$ 49.60	$ 54.03	$ 58.59
Grinder												
Inside	3,000	$ 94.35	$ 4.86	$ 10.01	$ 15.51	$ 21.36	$ 27.59	$ 33.04	$ 36.86	$ 40.80	$ 44.86	$ 49.04
Inside Low Income	3,000	$ 53.90	$ 3.64	$ 7.54	$ 11.75	$ 16.27	$ 21.14	$ 25.18	$ 27.55	$ 30.00	$ 32.52	$ 35.12
Inside	6,000	$ 134.76	$ 8.10	$ 16.73	$ 26.01	$ 35.94	$ 46.58	$ 55.60	$ 61.31	$ 67.20	$ 73.27	$ 79.52
Inside Low Income	6,000	$ 94.31	$ 6.88	$ 14.26	$ 22.25	$ 30.85	$ 40.13	$ 47.74	$ 52.00	$ 56.40	$ 60.93	$ 65.60
STEP												
Inside	3,000	$ 106.02	$ 6.69	$ 13.91	$ 19.32	$ 25.00	$ 30.97	$ 37.24	$ 43.84	$ 50.77	$ 52.90	$ 55.09
Resthaven	3,000	$ 124.59	$ 8.26	$ 17.20	$ 23.80	$ 30.72	$ 38.00	$ 45.67	$ 53.74	$ 62.23	$ 64.52	$ 66.88
Inside	6,000	$ 155.97	$ 11.70	$ 24.41	$ 33.45	$ 42.97	$ 53.02	$ 63.61	$ 74.80	$ 86.59	$ 88.72	$ 90.91
Resthaven	6,000	$ 189.00	$ 14.71	$ 30.73	$ 42.01	$ 53.88	$ 66.41	$ 79.66	$ 93.64	$ 108.40	$ 110.69	$ 113.05
Big Mountain												
Big Mountain	1,470,000	$ 12,876.28	$ 1,545.68	$ 3,267.82	$ 4,872.43	$ 6,638.81	$ 8,581.66	$ 9,863.08	$ 10,777.08	$ 11,720.56	$ 11,723.32	$ 11,726.16

Table ES.11: Monthly Wastewater Rate Increases Associated with Projected Rate Adjustments – Referenced to FY16

	Avg Monthly Gallons	Existing Bill FY16	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
			% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016
SC-1												
Inside	3,000	$ 31.82	10.4%	22.9%	38.1%	54.1%	72.9%	77.1%	81.5%	85.9%	90.5%	95.2%
Inside Low Income	3,000	$ 15.94	17.8%	39.6%	66.9%	95.4%	129.7%	134.6%	139.7%	144.9%	150.3%	155.8%
Outside	3,000	$ 41.11	11.8%	26.1%	43.7%	62.0%	83.8%	85.9%	88.0%	90.2%	92.5%	94.9%
Inside	6,000	$ 42.47	14.1%	31.3%	52.5%	74.8%	101.3%	105.9%	110.6%	115.4%	120.4%	125.5%
Inside Low Income	6,000	$ 26.59	20.7%	46.3%	78.3%	111.9%	152.3%	157.5%	163.0%	168.4%	174.2%	179.9%
Outside	6,000	$ 57.49	15.6%	34.8%	58.5%	83.2%	113.0%	114.5%	116.0%	117.6%	119.2%	120.9%
SC-2												
Inside	3,000	$ 55.95	6.1%	12.7%	19.9%	27.7%	36.3%	39.8%	43.4%	47.1%	50.9%	54.8%
Inside Low Income	3,000	$ 28.20	9.1%	19.1%	30.3%	42.7%	56.4%	59.9%	63.5%	67.2%	71.0%	74.8%
Outside	3,000	$ 67.61	6.5%	13.6%	21.3%	29.9%	39.3%	42.8%	46.4%	50.0%	53.8%	57.7%
Inside	6,000	$ 74.88	7.6%	15.9%	25.1%	35.2%	46.4%	49.9%	53.5%	57.2%	61.0%	64.9%
Inside Low Income	6,000	$ 47.13	10.3%	21.7%	34.4%	48.6%	64.4%	67.9%	71.5%	75.1%	78.9%	82.7%
Outside	6,000	$ 93.74	8.0%	16.9%	26.7%	37.6%	49.6%	53.1%	56.7%	60.4%	64.2%	68.0%
SC-3												
Inside	3,000	$ 69.75	6.4%	12.6%	19.2%	26.4%	34.2%	40.1%	45.0%	50.0%	55.3%	60.6%
Inside Low Income	3,000	$ 37.37	9.4%	18.2%	27.9%	38.4%	50.0%	58.0%	64.0%	70.2%	76.7%	83.3%
Inside	6,000	$ 96.33	8.0%	15.5%	23.7%	32.7%	42.4%	49.4%	54.8%	60.5%	66.4%	72.4%
Inside Low Income	6,000	$ 63.95	10.4%	20.3%	31.0%	42.8%	55.8%	64.5%	70.9%	77.6%	84.5%	91.6%
Grinder												
Inside	3,000	$ 94.35	5.2%	10.6%	16.4%	22.6%	29.2%	35.0%	39.1%	43.2%	47.5%	52.0%
Inside Low Income	3,000	$ 53.90	6.8%	14.0%	21.8%	30.2%	39.2%	46.7%	51.1%	55.7%	60.3%	65.2%
Inside	6,000	$ 134.76	6.0%	12.4%	19.3%	26.7%	34.6%	41.3%	45.5%	49.9%	54.4%	59.0%
Inside Low Income	6,000	$ 94.31	7.3%	15.1%	23.6%	32.7%	42.6%	50.6%	55.1%	59.8%	64.6%	69.6%
STEP												
Inside	3,000	$ 106.02	6.3%	13.1%	18.2%	23.6%	29.2%	35.1%	41.4%	47.9%	49.9%	52.0%
Resthaven	3,000	$ 124.59	6.6%	13.8%	19.1%	24.7%	30.5%	36.7%	43.1%	49.9%	51.8%	53.7%
Inside	6,000	$ 155.97	7.5%	15.7%	21.4%	27.6%	34.0%	40.8%	48.0%	55.5%	56.9%	58.3%
Resthaven	6,000	$ 189.00	7.8%	16.3%	22.2%	28.5%	35.1%	42.1%	49.5%	57.4%	58.6%	59.8%
Big Mountain												
Big Mountain	1,470,000	$ 12,876.28	12.0%	25.4%	37.8%	51.6%	66.6%	76.6%	83.7%	91.0%	91.0%	91.1%

Table ES.12: Monthly Wastewater Rate Percentage Increase Associated with Projected Rate Adjustments – Referenced to FY16

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1.0 Introduction

In May 2015, AE2S was retained by the City of Whitefish to complete a Water and Wastewater Rate Study. Data from the 2014 Fiscal Year (FY14), which began July 1, 2013 and ended June 30, 2014, was utilized to develop the Test Year for the study. This Technical Memorandum summarizes the assumptions, analysis, results, and recommendations for the portion of the study related to the Wastewater Utility.

1.1 Project Objectives

Primary objectives for completion of the Wastewater Rate study included the following:

- Review appropriateness of rate structure given assumptions related to customer usage characteristics and the manner in which the different user classes drive cost (cost causation);
- Develop rate plan for 2017-2026; and
- Obtain a customized rate model that can be used by the City for future rate-setting activities.

1.2 Study Process and Deliverables

To meet the City's objectives, AE2S completed a study consisting of the following components:

- Develop Test Year Revenue Adequacy Requirements
- Evaluate Wastewater Utility Rate Base
- Complete Cost of Service Analysis (COSA)
- Evaluate Rate Design Alternatives
- Project Five-Year Revenue Adequacy based on Recommended Rate Design

Throughout the study, the AE2S and City project team met via GoToMeeting or teleconference to discuss assumptions and intermediate results. In addition, AE2S participated in two (2) City Council Workshops to: 1) educate policy makers on the purpose and steps involved in a rate study, as well as what to the do with the results, and 2) to present preliminary results and solicit policy-related direction prior to developing final results and recommendations. A final presentation of the results and recommendations will also be made by AE2S at a City Council meeting concurrent with the delivery of this final report.

A primary objective of this study was to develop tools specifically tailored to the City of Whitefish that can be used annually by the City for rate planning and financial management of the utilities. The following deliverables for the Wastewater Utility have been developed as part of this project:

- Wastewater Utility Cost of Service and Revenue Adequacy Spreadsheet Model;

- Technical Memorandum for Wastewater Rate Study (this memo); and
- Rates 101 Worksheet – to be used by City staff in explaining Wastewater rate analyses and Wastewater rate structure.

2.0 System Description, Customer Usage, and Rate Structure

2.1 Overview of System

The City of Whitefish currently operates wastewater treatment facilities consisting of three (3) partially mixed lagoons for biological treatment, from which flows are sent through a flocculating clarifier prior to discharge to the Whitefish River. The design capacity for the clarifier portion of the system is 1.8 MGD. The City is the process of planning for construction of a new facility to address more stringent permit requirement and overall treatment objectives for the system. The new facility is scheduled to be commissioned in 2021. Table 2.1 summarizes details related to the treatment options under consideration at the time of this project, as provided by Anderson-Montgomery Consulting Engineers.

Alternative	Capital Cost	Annual O&M	20-Year Salvage Value	Total Net Present Worth
Biolac and Existing Clarifier	$15,175,800	$642,370	$2,151,500	$22,923,700
Sequencing Batch Reactor	$14,355,500	$780,500	$4,115,000	$23,084,200
Oxidation Ditch (Lakeside)	$19,587,500	$928,000	$5,727,500	$29,585,300

Table 2.1: Summary of Wastewater Treatment Plant Alternatives

The City operates an extensive collection and pumping system to convey wastewater to the existing wastewater treatment plant. The following bullets summarize system components.

- Greater than 57 miles of gravity mains ranging in size from eight (8) to 30-inch diameter;
- Greater than 13 miles of Forcemain ranging in size from 1.5 to 16-inch diameter;
- Fifteen (15) raw wastewater lift stations at locations throughout the system;
- Seventy-one (71) individual and one (1) centralized septic-tank-effluent-pump (STEP) station;
- One (1) centralized grinder pump station; and
- One (1) main lift station near the wastewater treatment plant, through which all wastewater is pumped enroute to the treatment facilities.

The Whitefish wastewater system has three (3) service zones throughout the City, some of which require substantial pumping. Figure 2.1 illustrates the current definition of the Service Classes 1, 2, and 3 (SC-1, SC-2, and SC-3). The City's rate structure designates different rates for the Service Zones 1 through 3 based on the amount of pumping required to convey the wastewater from the service zones to the main lift station.

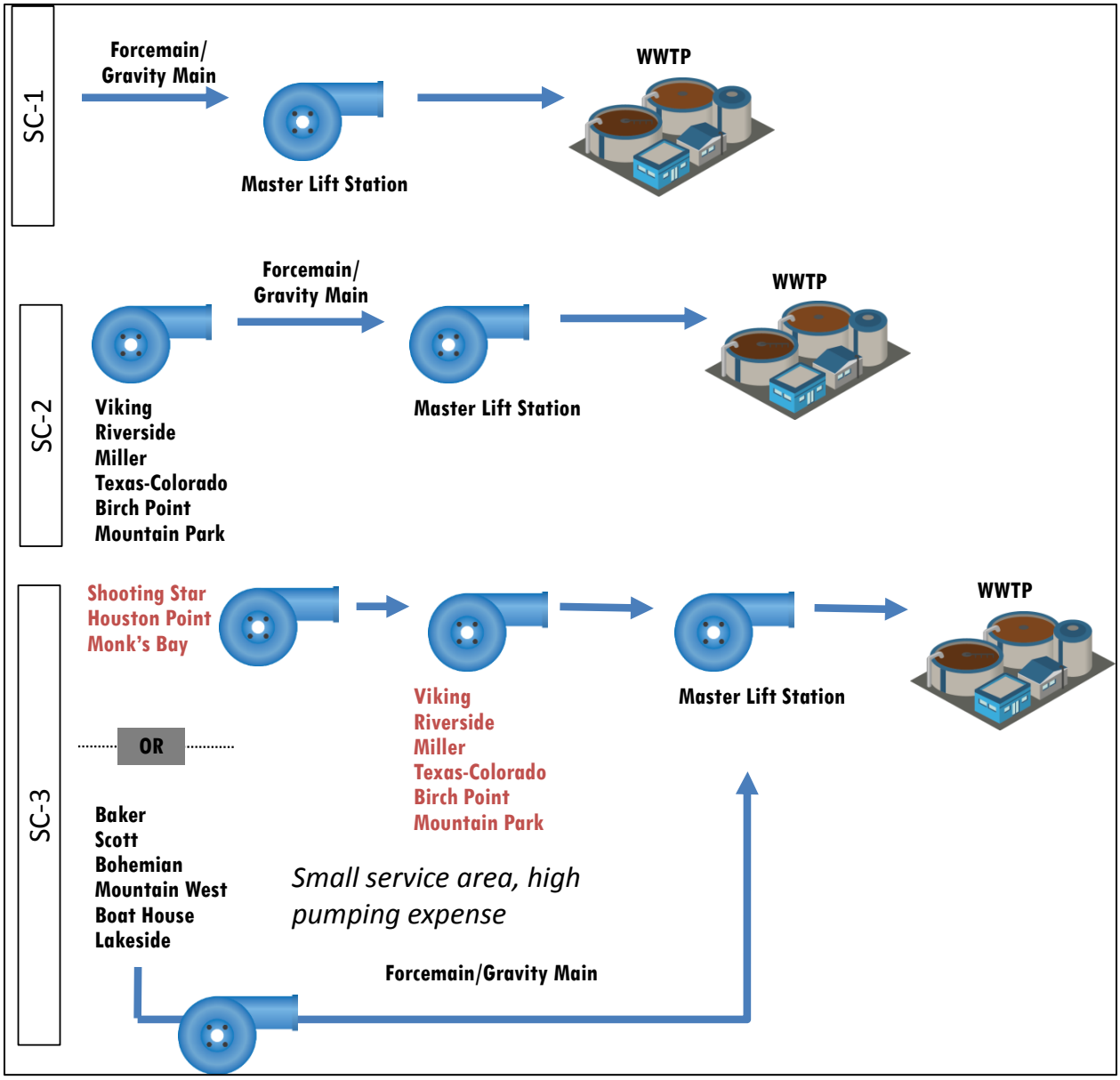

Figure 2.1: Summary of Existing Wastewater Service Zone Philosophy

As shown in Figure 2.1, customers in the SC-1 class are generally located in areas where the wastewater flows by gravity to the main lift station. It is then pumped one time to the wastewater treatment facilities. Similarly, the customers in the SC-2 class are located in areas where the wastewater must be pumped through an intermediate pump station to be delivered to the main lift station, where it is then pumped to the wastewater treatment facilities. Currently, the customers in SC-3 user class are associated with locations in which the lift station collects from a small service area, and incurs significant pumping cost to deliver the wastewater flow to either an intermediate lift station and then to the main lift station, or directly to the main lift station. Some of the locations classified as SC-3 are in newly developing areas that will

eventually have a greater user base, and some are in areas where terrain is such that significant pumping is required.

In addition to traditional domestic wastewater customers, the City also conveys and treats wastewater from STEP and grinder systems. These systems require additional maintenance by City employees at the locations of the STEP and grinder equipment, some of which are on private property and can be difficult to access at times. This results in additional cost allocation on top of the share of collection system and treatment system costs associated with conveyance and treatment. Figure 2.1 illustrates the types of facilities involved in the conveyance of STEP and Grinder wastewater to the wastewater treatment plant.

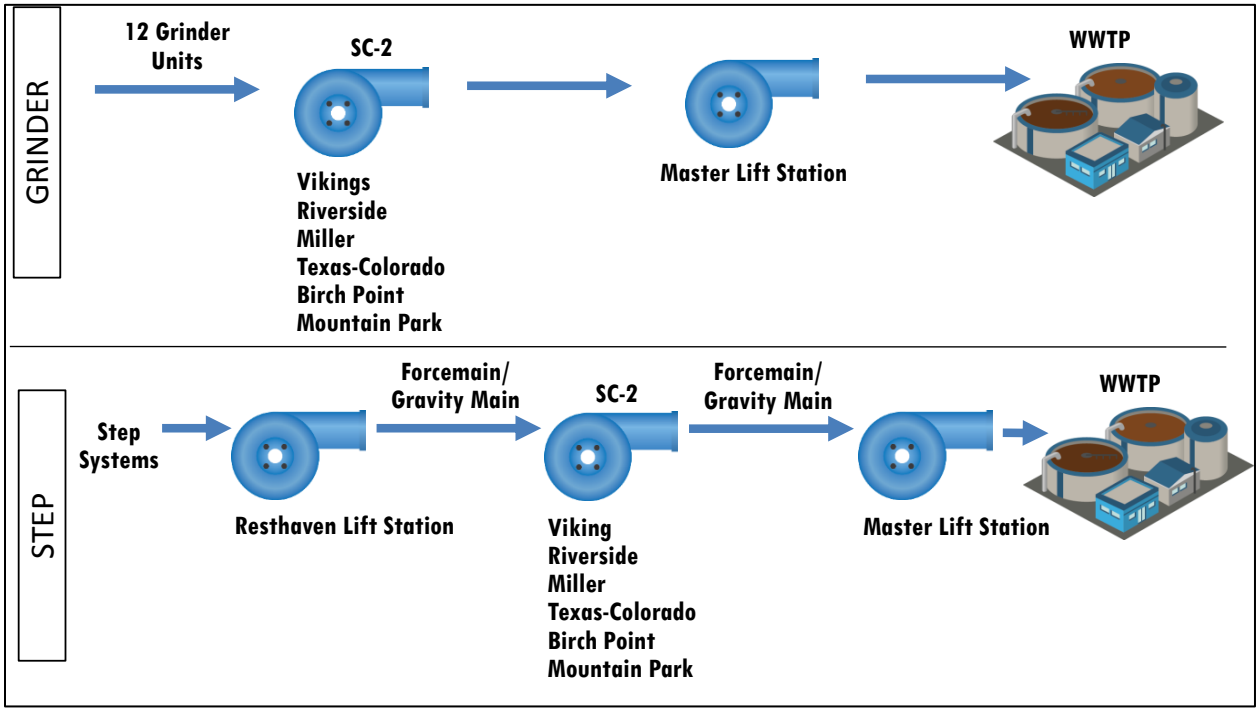

Figure 2.2: Summary of Existing Grinder and STEP System Conveyance

2.2 Customers and Usage

The City of Whitefish provides wastewater service to approximately 3,530 user accounts within City limits and 46 user accounts outside of the City. In addition, the City provides service to approximately 59 accounts associated with the Resthaven STEP system, and Big Mountain, a large resort located north of the City. Based on a review of billed flow and account data from FY10 through FY14, FY14 accounts were increased by one (1) percent annually to estimated total account for Test Year 2016. Similarly, FY14 flow data was grown by one-half percent annually to project flow for Test Year 2016. The City's rate structure does not distinguish between residential and commercial customers and the City does not serve any large industrial users. The number of accounts by user type and billed flow for the 2014 is shown in Table 2.1. In

addition to the billed flow totals in Table 2.2, it should be noted that the City of Whitefish is working to address what has been a significant amount of Inflow/Infiltration (I/I). Table 2.2 includes an I/I value based on the average reported value of 34 percent for the period of 2010 through 2014.

User Type	Number of Accounts	Billed Flow (gallons)
Inside Users		
SC-1	1,931	149,369,310
SC-1 – Low Income	200	6,546,240
SC-2	1,092	64,866,120
SC-2 – Low Income	115	3,930,340
SC-3	141	4,817,370
SC-3 – Low Income	410	231,570
Grinders	22	1,382,730
Grinders – Low Income	4	137,170
STEP	14	701,410
STEP – Low Income	0	0
Outside Users		
SC-1	11	1,850,390
SC-2	35	1,249,680
Resthaven	59	1,160,953
Big Mountain	1	17,640,000
Total	**3,635**	**253,883,283**
Inflow/Infiltration		**109,791,688**

Table 2.2: 2014 Accounts and Billed Wastewater Flow Data

2.3 Existing Wastewater Rate Structure

The City's Wastewater rate structure contains two components: a fixed monthly base charge and a volumetric rate based on service class. The City provides Wastewater service to residents and businesses within City limits, as well as to some users located outside City limits. Current policy is such that the City does not provide service to new users outside City limits unless the area becomes annexed. The existing volumetric and monthly base rate structures are shown in Tables 2.3 and 2.4, respectively.

In 2006, the City adopted a policy regarding Low Income and Senior Citizen discounts on water, sewer, and solid waste bills. Qualification for the discounts was based on eligibility for low income assistance from the Montana Department of Public Health and Human Services or proof of age 65 or over. Those eligible for the discount receive a 75 percent reduction in the monthly

base rate for water, wastewater, and solid waste. Table 2.4 also includes the Low Income/Senior Citizen base rates for 2016, as listed in the City's rate schedule.

User Class	2016 Rate $/thousand gallons
Inside City Users	
SC-1	$3.55
SC-2	$6.31
SC-3	$8.86
Grinder	$13.47
STEP	$16.65
Outside City Users	
SC-1	$5.46
SC-2	$8.71
SC-3	$10.54
Resthaven	$21.47
Big Mountain	$8.71

Table 2.3: 2016 Volumetric Wastewater Rate Structure

User Class	2016 Monthly Base Rate	2016 Monthly Base Rate - Discounted
Inside City Users		
SC-1	$21.17	$5.29
SC-2	$37.02	$9.27
SC-3	$43.17	$10.79
Grinder	$53.94	$13.49
STEP	$56.07	$14.03
Outside City Users		
SC-1	$24.73	--
SC-2	$41.48	--
SC-3	$47.58	--
Resthaven	$60.18	--
Big Mountain	$72.58	--

Table 2.4: 2016 Monthly Wastewater Base Rate Structure

In addition to domestic base and volumetric rates, the City also has rates on file for high strength concentrations of biochemical oxygen demand (BOD) and total suspended solids (TSS). The user base does not currently include a user that provides wastewater with strength that exceeds the domestic limits of 200 milligrams per liter (mg/L) BOD or 250 mg/L TSS. This is partly due to the absence of a major industrial or food processing industry. Because no revenue is generated from the strength components of the Wastewater rate structure, those rates are not addressed herein. However, the rate model does calculate the cost of service-based charges for BOD and TSS should the City have the need for updated strength rates. Because the City's permit for the new WWTP includes nitrogen and phosphorous limits, the City may want to consider whether establishing rates for these components are appropriate in the future if the City begins to serve or identifies any user(s) which are believed to be discharging nutrients in excess of established typical domestic strengths.

3.0 Test Year Revenue Requirements and Revenues

Revenue requirements consist of expenses incurred for operation and maintenance (O&M) of the Wastewater Utility, as well capital-related expenses such as debt service principal, capital outlays, and contributions to reserves. Because the City of Whitefish serves customers located outside of City limits, the utility method of determining revenue requirements was used. Based on the FY16 budget and the current CIP, Test Year revenue requirements were developed. The Test Year revenue requirements were then projected annually through 2026 based on assumed escalation factors, cash-funded capital in the CIP, and future debt associated with the CIP. It should be noted that the planning period for the corresponding Water Rate Study was a five-year period, which is typical. Because the Wastewater Utility is planning a major capital investment at approximately the five-year mark of the planning period, the Wastewater Rate analysis was extended to 10 years to enable the City to not just plan for the first year of a significant new debt service payment, but through the first years of such payment.

In addition to revenues, the COSA result also requires the development of Test Year revenues. These are presented in Section 3.4.

3.1 Operation and Maintenance Costs

For the purpose of developing water rates for FY17 through 2026, the O&M component of revenue requirements was based on the FY16 Wastewater Budget. In determining net O&M revenue requirements, consideration is also normally given to non-rate operating revenue, which is applied to offset the operating costs. In this case, the annual O&M-related non-rate revenues would be approximately $10,000, and are not included in the analysis. Table 3.1 summarizes total projected net O&M revenue requirements.

3.2 Capital Costs

Total capital-related revenue requirements were evaluated in terms of the cash-basis for the purpose of establishing the utility-basis capital requirements to be met with rate revenue. Completion of the Cost of Service Analysis (COSA) utilizing capital revenue requirements established on the utility basis is the recommended approach when a system provides service to users located outside of City limits, such as the case for the City of Whitefish. These steps are described below.

3.2.1 Development of Cash-Basis Capital-Related Revenue Requirements

The City provided information related to existing and anticipated debt service requirements, the five-year Capital Improvement Plan (CIP), and cash-funded capital outlays within the CIP. For the purpose of developing a representative Test Year, the annual average cash-funded CIP value was calculated. This average value was also used in subsequent years. In addition, to prepare the

Utility for the future debt payment associated with the new wastewater treatment plant, 25 percent of the future annual debt payment associated with a $20 million WWTP was included in the Test Year 2016 revenue requirements. By adding an additional 25 percent of the annual debt payment to the revenue requirements each year (25 percent in 2017, 50 percent in 2018, and 75 percent in 2019), the Utility rates can be slowly increased to a level that will support the new debt-related revenue requirement when it becomes effective in 2020. This allows the Utility to grow into the rate adjustments necessary to meet the future debt payment, and in the interim builds reserves that can potentially be used to minimize the future rate adjustments, if coverage requirements can still be met. The Capital-related revenue requirements for the Test Year 2016 are shown in Table 3.2.

Budget Line Item	2016 Budget
Personnel Services	$929,386
Office Supplies/Materials	$3,000
Operating Supplies	$27,125
Chemicals	$114,000
Repair/Maintenance Supplies	$149,709
Postage & Freight	$13,000
Printing	$600
Publicity/Subscription	$12,503
Utility Services	$13,132
Electrical	$95,000
Professional Services	$275,200
Repair & Maintenance Services	$52,000
Travel & Training	$11,500
Other Purchased Services	$8,000
Contract Services	$2,500
Insurance	$27,000
Rent	$5,210
Special Assessments	$400
State Assessments and Fees	$3,500
Wastewater Utility ROW Fee	$120,000
Whitefish Lake Institute	$6,667
Administrative Expense	$18,445
New WWTP O&M	$0
Total O&M Revenue Requirements	**$1,887,877**

Table 3.1: Summary of Net Wastewater O&M Revenue Requirements – Test Year 2016

Capital Revenue Requirement	Test Year 2016
Debt Service (Existing)	$250,541
Debt Service (25% of Future WWTP Payment)	$335,324
Rate-Funded Capital	$420,000
Total Capital Revenue Requirements	$1,005,865

Table 3.2: Summary of Test Year 2016 Capital-Related Cash-Basis Wastewater Revenue Requirements

3.2.2 Development of Utility-Basis Capital-Related Revenue Requirements

To fairly assign the cost of only those assets in service and utilized by outside City user classes, the Utility-basis methodology was used to determine the capital-related portion of the revenue requirements to be recovered from rates. The Utility-basis methodology calculates the capital-related component of revenue requirements based on depreciation of system assets in service and a return on capital investment made by the owners of the system. To complete this calculation, the City provided a listing of all assets, annual depreciation, and undepreciated asset value. Once capital-related revenue requirements have been established, methodology used throughout the industry and promoted by the American Water Works Association (AWWA) and Water Environment Federation was followed to appropriately allocate the Utility-basis capital-related revenue requirements to all users classes. For Test Year 2016, the depreciation and calculated return on rate base are $702,153 and $303,712, respectively, and are shown in Table 3.3.

Revenue Requirement	Cash Basis	Utility Basis
O&M	$1,887,877	$1,887,877
Debt Service (Existing)	$250,541	--
WWTP Capital Reserve	$335,324	--
Rate-Funded CIP	$420,000	--
Depreciation	--	$702,153
Return on Rate Base	--	$303,712
Total Revenue Requirements	**$2,893,742**	**$2,893,742**

Table 3.3: Summary of Test Year 2016 Cash- and Utility-Basis Total Wastewater Revenue Requirements

As shown in Table 3.3, the cash- and utility-basis capital-related revenue requirements are equal. This is because in practice, the Wastewater Utility must generate enough rate revenue to meet its cash-basis revenue requirements. It is how the cash-and utility-basis capital revenue requirements are ultimately allocated to user classes that distinguishes between the two approaches. Under the cash-basis, capital-related revenue requirements are ultimately assigned to user classes based on the specific application of the cost each year (collection, pumping, treatment, etc.), while under the utility-basis, capital-related revenue requirements are assigned to specific user classes based on the value of the system from which the user classes benefit.

3.3 Total Revenue Requirements

Table 3.4 summarizes the total revenue requirements developed for the Test Year 2016. These form the basis for the Cost of Service Analysis (COSA) addressed in Section 4.0, and will be adjusted for anticipated future changes in the Revenue Adequacy Analysis in Section 6.0.

Revenue Requirement	Test Year 2016
O&M-Related	$1,887,877
Capital-Related	$1,005,865
Total Revenue Requirements	**$2,893,742**

Table 3.4: Summary of Test Year 2016 Wastewater Revenue Requirements

3.4 Rate Revenues

Table 3.5 summarizes the Test Year 2016 rate revenues, based on FY16 Wastewater rates and projected FY16 accounts and billed flow. To estimate Test Year 2016 accounts and billed flow, the following assumptions were applied to the values in Table 2.2:

- The number of Inside City accounts was indexed by 1.0 percent per year from 2014 to 2016;
- The number of Outside City accounts was not indexed (new outside users will not be added without annexation); and
- Billed flow growth for Inside City accounts, Resthaven, and Big Mountain were indexed by 0.5 percent per year from 2014 to 2016.

User Class	Test Year 2016 Rate Revenue
Inside City Users	
SC-1	$1,064,545
SC-2	$976,553
SC-3	$73,511
Grinder	$35,463
STEP	$21,157
Outside City Users	
SC-1	$13,451
SC-2	$28,535
SC-3	$0
Resthaven	$67,658
Big Mountain	$155,284
Total	**$2,436,156**

Table 3.5: Summary of Test Year 2016 Wastewater Rate Revenues

4.0 Cost of Service Analysis

This section summarizes the cost of service assumptions, analysis and results. Detailed tables summarizing the costs by ownership, cost type, and cost allocation to the user classes are found in the rate model.

4.1 Methodology

Following the establishment of total O&M and capital revenue requirements, the revenue requirements were taken through a series of steps to result in allocation to each user class. In the first step, revenue requirements were categorized into functional components based on information provided by City staff from the budget and from knowledge of operational practices. In the second step, costs were classified as to how the cost is related to usage characteristics – Capacity (Max flow), Average Day (Commodity), Customer, Assigned – Grinder, or Assigned - STEP applicability. In the third step, costs were allocated to customer classes based on the system usage characteristics of each class. The following subsections describe the steps utilized in the Wastewater COSA.

4.2 Analysis of O&M Component

4.2.1 Functionalization

Under the Utility-basis methodology, it is important to identify which costs are applicable to outside users and which are not. As a result, the functionalization is completed in two steps: evaluation of applicability of cost to inside and outside users and then categorization into functional components. Table 4.1 summarizes the functions associated with the O&M revenue requirements for the Whitefish Wastewater Utility, and the applicability to each type of user.

O&M Function	All Users	SC-2 Only	SC-3 Only	Assigned – Grinder	Assigned – STEP
Treatment – Fixed	100%				
Treatment – Variable	100%				
Collection	100%				
Pumping – SC-2		100%			
Pumping – SC-3			100%		
Assigned - Grinder				100%	
Assigned – STEP					100%
Admin	100%				

Table 4.1: Applicability of Wastewater O&M Revenue Requirements to Users by Type

The following assumptions form the basis for the values in Table 4.1:

- Revenue requirements related to operation of the main lift station, wastewater treatment facility, the collection system pipelines, and Admin are driven by all system users, regardless of location.
- Cost related to the main lift station was functionalized with treatment.
- Costs associated with lift stations in SC-2 are applicable to SC-2 users located Inside and Outside of City limits, as well as to Resthaven and Big Mountain.
- Costs associated with lift stations in SC-3 are applicable only to SC-3 users located Inside and Outside of City limits.
- Costs functionalized as Assigned – Grinder are applicable only to the Grinder user classes.
- Costs functionalized as Assigned – STEP are applicable only to the STEP user classes, including Resthaven.
- Based on the scattered location of Outside City users and the City's current policy of annexation for service, it was assumed the Outside users benefit from the total collection system network in the same manner as inside City users.

In addition, input from City staff indicated that the SC-3 areas were primarily associated with high-cost pumping facilities with a small user base. It was further noted that some of these facilities are in developing areas that with growth, will more closely resemble an SC-2 service area in the future. Based on this discussion and input from Council members in a Study Work Session, a revision to the approach to the Service Classes was made as part of the COSA, shown in Figure 4.1.

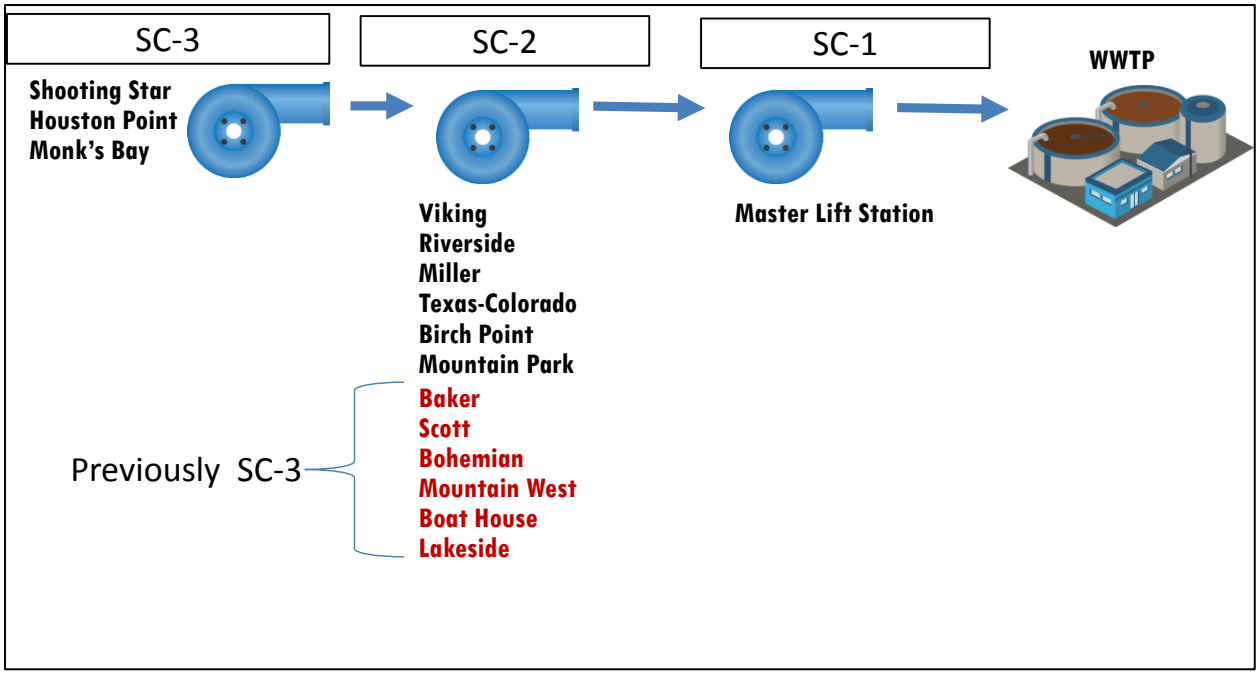

Figure 41: Revised Wastewater Service Class Approach

To determine functionalization factors for fixed and variable O&M costs associated with pumping, Grinders, and STEP, an analysis of lift station operations was completed. The purpose was to develop fixed and variable functionalization percentages to be applied to the values and functions in Table 4.2. Note that the variable costs associated with the WWTP were not included in the analysis, as those were functionalized 100 percent to the treatment function. City staff provided information regarding the assignable cost associated with maintaining equipment benefitting only the Grinder or STEP user classes.

Function	Test Year Fixed Cost	Test Year Fixed Cost – Assigned	Test Year Variable Cost
Treatment – Variable (Electricity Only)	$286,611	$0	$95,000
Pumping – SC-2		$0	
Pumping – SC-3		$0	
STEP		$26,000	
Grinder	$0	$9,500	
Total	**$286,611**	**$35,500**	**$95,000**

Table 4.2: Test Year Wastewater O&M Revenue Requirements – Pumping System, Grinders, and STEP

To determine the portion of fixed costs associated with the SC2 and SC-3 service zones, Grinders, and STEP, an analysis of the lift stations was completed. Table 4.3 shows the breakdown of 2014 electrical costs by facility type. This information helped to determine the portion of electrical cost associated with the main lift station and WWTP. The remainder was then evaluated in terms of lift station pump hours and criticality factors to develop

functionalization percentages for SC-2, SC-3, Grinders, and STEP. It was assumed that a portion of the cost associated with a particular lift station can be based on criticality of the facility, while another portion can be based on capacity of each facility. The assigned criticality factor was based on the severity of the consequence assumed to be associated with failure of the facility. The criticality was weighted as 25 percent of the allocation and capacity was weighted as 75 percent to calculate an overall allocation for each facility. This analysis is shown in Table 4.4.

Facility Type	Kilowatt Hrs	%
Main Lift Station	262,640	26.3%
WWTP	619,600	62.0%
Lift Stations/Grinders/STEP	117,169	11.7%
Total	**999,409**	**100%**

Table 4.3: Summary of Electrical Costs by Wastewater Facility Type – 2014

Lift Station	Service Class	Criticality Factor	Criticality %	Capacity (gpm)	Capacity %	Overall % (25% Criticality/ 75% Capacity)
Birch Point	SC-2	1.5	7.5%	160	5.2%	5.8%
Texas-Co	SC-2	1	5.0%	170	5.5%	5.4%
Miller/City Beach	SC-2	1.5	7.5%	345	11.3%	10.3%
Riverside	SC-2	1	5.0%	301	9.8%	8.6%
Viking	SC-2	1.5	7.5%	425	13.9%	12.3%
Mountain Park	SC-2	1	5.0%	422	13.8%	11.6%
Mountain West	SC-2	1.25	6.25%	82	2.7%	3.6%
Boat House	SC-2	1.5	7.5%	225	7.3%	7.4%
Bohemian	SC-2	1	5.0%	75	2.4%	3.1%
Scott	SC-2	1.5	7.5%	350	11.4%	10.4%
Baker	SC-2	1.25	6.25%	98	3.2%	4.0%
Monk's Bay	SC-3	1.5	7.5%	100	3.3%	4.3%
Houston Pt	SC-3	1	5.0%	200	6.5%	6.1%
Shooting Star	SC-3	1	5.0%	54	1.8%	2.6%
Lakeside/City Beach	SC-2	1.5	7.5%	14	0.5%	2.2%
Rest Haven	STEP	1	5.0%	45	1.5%	2.4%
Total			100.0%		100.0%	100.0%

Table 4.4: Wastewater Lift Station Analysis

Based on the evaluation in Table 4.4, the percentages shown in Table 4.5 were used to functionalize non-treatment fixed O&M costs to the Pumping, Grinder, and STEP functions. There is no lift station directly assignable to the Grinder function. As a result, the assigned Grinder cost reported by the City in Table 4.2 was used for the functionalized fixed costs associated with the Grinder function. The percentages in the last column of Table 4.4 were applied to the reminder of fixed costs not assigned to Grinder or STEP.

Function	Fixed Cost	Functionalization %	Functionalized Cost	Assigned Cost
Pumping – SC-2	$286,611	84.6%	$242,515	
Pumping – SC-3		13.0%	$37,358	
Assigned – Grinder		--	--	$9,500
Assigned – STEP		2.4%	$6,738	$26,000
Total	**$286,611**	**100.0%**	**$286,611**	**$35,500**

Table 4.5: Summary of Fixed Lift Station Cost Functionalization

Table 4.6 summarizes the functionalization of O&M budget line items based on how operations of various portions of the system drive the budgeted O&M expenditures, accounting for the percentages calculated in Tables 4.4 and 4.5. Table 4.7 summarizes the total functionalized net O&M revenue requirements for the Test Year 2016.

4.2.2 Classification

Table 4.8 summarizes the classification percentages applied to functionalized O&M revenue requirements for the Test Year 2016. Table 4.9 summarizes the classified O&M revenue requirements. The following bullets highlight the assumptions behind the O&M classification percentages.

- Treatment – Fixed: These expenses are associated with meeting maximum day demands as well as treating strength, and are split evenly between Capacity and strength (BOD and TSS). The model was set up this way in the event that a user comes online in the future that exceeds the domestic limit and therefore is subject to BOD and/or strength surcharges. Because the City currently does not have a high strength user, the BOD and TSS costs are treated as Capacity costs. As a result, Treatment – Fixed costs are treated classified 100 percent to the Capacity class for the purpose of this study.
- Treatment – Variable: This expense varies directly with wastewater flow volume and is assigned as a 100 percent Commodity cost.
- Collection, Pumping – SC-2, and Pumping – SC-3: Wastewater system costs are largely flow-driven. As a result, these cost functions were classified 100 percent to the Commodity class.

Budget Line Item	Treatment Fixed	Treatment Variable	Collection	Pumping SC-2	Pumping SC-3	Assigned – Grinder	Assigned - STEP	Admin
Personnel Services	30.7%		15.3%	23.1%	3.6%	0.9%	3.1%	23.3%
Office Supplies/Materials	25%							75%
Operating Supplies	35%		20%	33.9%	5.2%	1.3%	4.6%	
Chemicals		100%						
Repair/Maintenance Supplies			51%					49%
Postage & Freight	5%							95%
Printing	50%							50%
Publicity/Subscription	50%		25%					25%
Utility Services	24%		34%					42%
Electrical		88.3%		3%	0.2%	5.3%	3.2%	
Professional Services	80%							20%
Repair & Maintenance Services	35%		20%	30.1%	4.6%	1.2%	4.1%	5%
Travel & Training	50%							50%
Other Purchased Services								100%
Contract Services								100%
Insurance	51.7%		33%	10.3%	0.1%	0.7%	3.1%	1%
Rent			100%					
Special Assessments								100%
State Assessments and Fees								100%
Wastewater Utility ROW Fee								100%
Whitefish Lake Institute								100%
Administrative Expense								100%
New WWTP O&M	100%							

Table 4.6: Functionalization of Test Year 2016 Wastewater O&M

O&M Function	All Users	SC-2 Only	SC-3 Only	Assigned – Grinder	Assigned – STEP
Treatment – Fixed	$563,955				
Treatment – Variable	$197,885				
Collection	$256,722				
Pumping – SC-2		$245,217			
Pumping – SC-3			$37,163		
Assigned – Grinder				$14,588	
Assigned - STEP					$36,259
Admin	$536,088				
Total O&M	**$1,554,651**	**$245,217**	**$37,163**	**$14,588**	**$36,259**

Table 4.7: Functionalized Wastewater O&M – Test Year 2016

- Assigned – Grinder: These costs are those directly attributable to only those users benefitting from the Grinder systems. As a result these are directly assigned to the Grinder class.
- Assigned – STEP: These costs are those directly attributable to only those users benefitting from the STEP systems. As a result these are directly assigned to the STEP class.
- Admin: Admin costs are associated with providing service to each account, and are classified 100 percent to the Customer class.

O&M Function	Capacity	Commodity	Customer	Assigned – Grinder	Assigned - STEP
Treatment – Fixed	100%				
Treatment – Variable		100%			
Collection		100%			
Pumping – SC-2		100%			
Pumping – SC-3		100%			
Assigned – Grinder				100%	
Assigned - STEP					100%
Admin			100%		

Table 4.8: Wastewater Classification Percentages – Test Year 2016

O&M Function	All Users	SC-2 Only	SC-3 Only	Assigned – Grinder	Assigned – STEP
Capacity	$736,585				
Commodity	$454,607	$245,217	$37,163		
Customer	$536,088				
Assigned – Grinder				$14,588	
Assigned – STEP					$36,259
Total O&M	**$1,554,651**	**$245,217**	**$37,163**	**$14,588**	**$36,259**

Table 4.9: Classified Wastewater O&M – Test Year 2016

4.2.3 Allocation

The final step in the analysis of O&M revenue requirements was to allocate the classified costs to the user classes. The capacity cost factors took into account the contracted capacity associated with service to Big Mountain. Total WWTP capacity is currently 1.8 million gallons per day (MGD). Big Mountain has a contracted capacity of 0.264 MGD, but a review of historical monthly data showed the maximum demand this customer has placed on the system is 0.116 MGD. Although the City could rightfully charge the full share of contracted capacity to this user, it is likely that if the COSA was calculated with the contracted number, the user would elect to renegotiate the contracted value due to excessive cost assignment. To better reflect how Big Mountain actually uses the system, the contracted maximum was assumed to be 0.116 MGD for the purpose of this analysis. This value can be updated in the future if usage patterns for this user change. The remainder of the capacity was allocated to the other user classes based on flow.

A second consideration in the calculation of allocation factors was that of I/I. As previously noted and shown in Table 2.2, the City has experienced average I/I values of roughly 34 percent. The cost associated with this excess flow becomes a system-wide cost that is most appropriately apportioned based on number of users on the system rather than flow. As a result, the Commodity allocation factors, which are typically based on average flow for the Test Year, have been adjusted to include an allocation to each user class based on the number of accounts associated with each user class.

Table 4.10 summarizes the allocation factors applied to the O&M revenue requirements. Table 4.11 summarizes the O&M Revenue Requirements for Test Year 2016 based on the allocation factors in Table 4.10. Detailed allocation tables are found in the rate model.

User Class	Capacity	Commodity	Customer	Assigned – Grinder	Assigned - STEP	SC-2 Only	SC-3 Only
Inside City Users							
SC-1	59.6%	60.6%	58.6%				
SC-2	29.4%	29.9%	34.8%			82.6%	
SC-3	1.6%	1.6%	2.6%				100%
Grinder	0.6%	0.6%	0.7%	100%			
STEP	0.3%	0.3%	0.4%		27.7%		
Outside City Users							
SC-1	0.6%	0.6%	0.3%				
SC-2	0.6%	0.6%	1.0%			1.7%	
Resthaven	0.8%	0.8%	1.6%		72.3%	2.2%	
Big Mountain	6.4%	4.87%	0.03%			13.4%	
Total	100%	100%	100%	100%	100%	100%	100%

Table 4.10: Factors for Allocation of Wastewater O&M Revenue Requirements – Test Year 2016

User Class	Capacity	Commodity	Customer	Assigned – Grinder	Assigned - STEP	SC-2 Only	SC-3 Only
Inside City Users							
SC-1	$335,967	$275,394	$314,364				
SC-2	$166,014	$136,083	$186,318			$202,563	$37,163
SC-3	$9,118	$7,474	$14,014				
Grinder	$3,503	$2,871	$3,798	$14,588			
STEP	$1,708	$1,400	$2,045		$10,047		
Outside City Users							
SC-1	$3,331	$2,731	$1,623				
SC-2	$3,5165	$2,881	$5,163			$4,290	
Resthaven	$4,455	$3,652	$8,618		$26,212	$5,436	
Big Mountain	$36,344	$22,121	$146			$32,928	
Total	**$563,955**	**$454,607**	**$536,088**	**$14,588**	**$36,259**	**$245,217**	**$37,163**

Table 4.11: Allocated Wastewater O&M Revenue Requirements – Test Year 2016

4.3 Analysis of Capital Component

Section 4.2 described the COSA approach applied to the O&M-related revenue requirements. The COSA also involved the application of the same methodology to the capital-related revenue requirements. To do so, an additional step was first taken to evaluate the fixed asset base to determine which portions of the rate base provide a benefit to users located outside of City limits.

4.3.1 Fixed Asset Analysis

Section 3.2.2 presented the approach to determining the component of capital-related revenue requirements associated with the return on rate base. The rate base represents the total undepreciated value of the wastewater system. Under the Utility method, it is only appropriate to include those assets that are in service during the year for which rates are calculated. Table 4.12 summarizes the total rate base by asset type for Test Year 2016. The asset types represent the functions that were evaluated as part of the COSA. Tables 4.12 and 4.13 also show projected future rate base adjusted for new capital placed in service and annual depreciation.

	2016	2017	2018	2019	2020	2021
Treatment	$6,518,352	$6,327,474	$5,931,095	$5,272,198	$4,881,971	$23,589,791
Collection	$4,161,163	$5,753,197	$6,189,799	$6,162,893	$5,920,922	$5,701,523
Pumping – SC-2	$1,296,031	$1,931,197	$1,794,708	$1,658,219	$1,521,730	$1,385,241
Pumping – SC-3	$7,729	$17,005	$13,913	$10,821	$7,729	$4,638
Assigned - Grinder	$93,760	$84,620	$75,480	$66,340	$57,200	$55,440
Assigned - STEP	$394,377	$371,026	$347,674	$324,323	$300,972	$277,620
Administrative	$128,227	$130,096	$116,262	$172,427	$136,593	$107,891
Total Asset Value	**$12,599,640**	**$14,614,615**	**$14,468,931**	**$13,667,222**	**$12,827,117**	**$31,122,145**

Table 4.12: Wastewater Rate Base Projections – Test Year 2016 through 2021

	2022	2023	2024	2025	2026
Treatment	$22,713,312	$21,836,833	$20,979,000	$20,156,802	$19,336,632
Collection	$5,702,819	$5,696,524	$5,683,828	$5,671,056	$5,662,949
Pumping – SC-2	$1,268,506	$1,152,280	$1,036,055	$919,829	$833,130
Pumping – SC-3	$3,092	$1,546	$0	$0	$0
Assigned - Grinder	$53,680	$51,920	$50,160	$48,400	$46,640
Assigned - STEP	$254,269	$230,918	$207,567	$184,215	$160,864
Administrative	$76,268	$46,646	$37,023	$29,400	$25,000
Total Asset Value	**$30,071,946**	**$29,016,666**	**$27,993,633**	**$27,009,703**	**$26,065,215**

Table 4.13: Wastewater Rate Base Projections –2022 through 2026

To determine the amount of the rate base upon which a rate of return can be fairly charged to outside users, the rate base in Tables 4.12 and 4.13 was classified and allocated using the classification and allocation factors presented in Tables 4.8 and 4.10, respectively. The result of this process, for which detailed tables can be found in the rate model, is summarized in Table 4.14.

User Classes	Test Year 2016 Rate Base
Inside City Users	
SC-1	$6,479,152
SC-2	$4,279,612
SC-3	$184,883
Grinder	$161,444
STEP	$142,318
Outside City Users	
SC-1	$63,883
SC-2	$90,917
Resthaven	$400,811
Big Mountain	$796,620
Total	**$12,599,640**

Table 4.14: Allocation of Test Year 2016 Wastewater Rate Base

Table 3.3 showed the return on rate base needed to match cash requirements for the Test Year 2016 as $303,712. Standard rate-setting methodology allows a system to charge outside (non-owner) system users a higher percentage return on rate base than is charged for City (owner) system users to account for risk associated with serving a user that is not invested in the system, and to bring a reasonable return on investment to system owners. Rate of return percentages are often established in contracts for service to outside users. In the absence of a specified differential rate of return for outside users, measures such as the weighted average cost of capital (WACC) or the US Treasury rate are often used. For the purpose of this analysis, the WACC was calculated and applied as the difference in rate of return percentage for the outside users versus the inside users. When calculating the total asset base, it is common to include working capital and work in progress. Per industry standard, a working capital amount of 12.5 percent was used. This WACC calculation is shown in Table 4.15. The following information was needed for this calculation:

- Total Outstanding Debt (2016) = $4,225,006
- Effective Interest Rate on Debt (2016) = 1.8%
- Working Capital for 2016 (12.5%) = $235,985
- Work in Progress (2016) = $3,380,777
- 30-Year US Treasury Rate as of June 30, 2015 = 3.11%

		Test Year 2016	Calculation
A	Outstanding Debt	$4,225,006	
B	Effective Interest Rate on Debt	1.8%	
C	Rate Base	$12,599,640	
D	Working Capital	$235,985	
E	Work in Progress	$3,380,777	
F	Total Asset Value	$16,216,402	C + D + E
G	30-Year Treasury Rate	3.11%	
	WACC	**2.8%**	A/(A+F)*B+F/(A+F)*G

Table 4.15: Calculation of WACC for Test Year 2016 – Wastewater

The calculated WACC was used as the difference between the return on rate base percentages for the inside and outside City users. Based on a total rate base of $16,216,402 (including working capital and work in progress), a total return of return of $303,712 results in an overall return on rate base percentage of 1.9 percent. Table 4.16 shows the calculated return on rate base for the inside and outside users.

	Test Year 2016
Total Rate Base	$16,216,402
Inside User Rate Base	$14,543,407
Outside User Rate Base	$1,672,995
Inside User Return on Rate Base %	1.6%
Outside User Return on Rate Base %	4.4%
Inside User Return	**$229,793**
Outside User Return	**$73,919**
Total Return on Rate Base	$303,712

Table 4.16: Summary of Calculation of Return on Wastewater Rate Base – Test Year 2016

Once the value of the return on rate base is established, it along with the depreciation, can be functionalized, classified, and allocated in a similar manner as the O&M revenue requirements.

4.3.2 Depreciation Analysis

Functionalization of the projected annual depreciation values are shown in Tables 4.17 and 4.18. The values for 2017 through 2026 were developed based on existing depreciation, work in progress, and the CIP.

	2016	2017	2018	2019	2020	2021
Treatment	$377,979	$396,379	$391,397	$390,227	$389,992	$879,679
Collection	$185,719	$301,398	$319,877	$354,057	$369,809	$388,704
Pumping – SC-2	$87,683	$136,489	$136,489	$136,489	$136,489	$131,735
Pumping – SC-3	$1,546	$3,092	$3,092	$3,092	$3,092	$1,546
Assigned - Grinder	$9,140	$9,140	$9,140	$9,140	$9,140	$9,140
Assigned - STEP	$23,351	$23,351	$23,351	$23,351	$23,351	$23,351
Administrative	$16,735	$21,835	$23,835	$43,835	$36,702	$32,323
Total Depreciation	**$702,153**	**$891,683**	**$907,181**	**$960,191**	**$968,574**	**$1,466,478**

Table 4.17: Wastewater Depreciation Projections – Test Year 2016 through 2021

	2022	2023	2024	2025	2026
Treatment	$879,679	$861,033	$825,398	$823,370	$817,428
Collection	$396,295	$406,295	$415,072	$421,636	$431,636
Pumping – SC-2	$131,226	$131,226	$131,226	$101,699	$101,699
Pumping – SC-3	$1,546	$1,546	$0	$0	$0
Assigned - Grinder	$9,140	$9,140	$9,140	$9,140	$9,140
Assigned - STEP	$23,351	$23,351	$23,351	$23,351	$18,196
Administrative	$32,323	$32,323	$32,323	$31,100	$31,100
Total Depreciation	**$1,473,560**	**$1,464,913**	**$1,436,510**	**$1,410,296**	**$1,409,198**

Table 4.18: Wastewater Depreciation Projections –2022 through 2026

To determine the amount of the depreciation that can be fairly charged to outside users, the depreciation in Tables 4.17 and 4.18 was classified and allocated using the classification and allocation factors presented in Tables 4.8 and 4.10, respectively.

4.3.3 Summary of Total Revenue Requirements

Table 4.19 summarizes the total revenue requirements for the Test Year 2016.

User Class	Test Year 2016 Total Revenue Requirements
Inside City Users	
SC-1	$1,403,912
SC-2	$1,020,333
SC-3	$82,630
Grinder	$40,615
STEP	$27,654
Outside City Users	
SC-1	$16,175
SC-2	$26,911
Resthaven	$88,590
Big Mountain	$186,922
Total	**$2,893,742**

Table 4.19: Summary of Test Year Total Wastewater Revenue Requirements by User Type

4.4 Cost of Service Analysis Results

Table 4.20 summarizes the results of the COSA in terms of cost versus revenue percentage. There results were used to make rate recommendations for the planning period. The percent difference column is calculated as the cost percentage minus the revenue percentage, divided by the cost percentage. A percent difference within +/- 10 percent is generally considered to be within an acceptable range. When the percent difference value is greater than +/- 10 percent, revision to the rates and/or structure are deemed appropriate to improve the cost-revenue relationship between the user classes.

User Class	Test Year 2016		
	Cost Percentage	Revenue Percentage	% Difference
Inside City Users			
SC-1	48.5%	43.7%	-9.9%
SC-2	35.3%	40.1%	13.7%
SC-3	2.9%	3.0%	5.7%
Grinder	1.4%	1.5%	3.7%
STEP	1.0%	0.9%	-9.1%
Outside City Users			
SC-1	0.6%	0.6%	-1.2%
SC-2	0.9%	1.2%	26.0%
SC-3	--	--	--
Resthaven	3.1%	2.8%	-9.3%
Big Mountain	6.5%	2.4%	-1.3%
Total	100%	100%	

Table 4.20: Test Year 2016 Wastewater Cost of Service Analysis Results

Given a typically recommended COSA target difference of ±10%, the detailed COSA results generally showed that based on the assumptions utilized, the revenues associated with each user class are generally in line with the cost. It does appear that the SC-2 user class is generating revenue at a higher percentage than its associated cost, and that the SC-1, STEP, and Resthaven user classes are generating revenue at a percentage less than the associated cost.

It should be noted that Montana Law specifies that rate increases applied to users outside of City limits cannot exceed those applied to similar users located within City limits. As a result, the City has limited ability to correct cost of service disparities associated with outside users.

5.0 Rate Design

Based on the results of the COSA, the existing rate structure was evaluated to determine the appropriateness of the structure. The revised approach to service classes was discussed previously, and did not result in a change in rate structure, but did result in a shift of some users from the SC-3 user class to the SC-2 user class.

As noted previously, the City of Whitefish currently offers a Low Income and Senior Citizen discount on water, sewer, and solid waste bills. Qualification for the discounts is based on eligibility for low income assistance from the Montana Department of Public Health and Human Services or proof of age 65 or over. Those eligible for the discount receive a 75 percent reduction in the monthly base rate for water, wastewater, and solid waste.

In October 2015, the Attorney General issued an opinion regarding discounted or preferential rates to Senior Citizens, based on actions by the City of Bozeman to offer such a discount. The Attorney General found that it did not violate the statutory requirement under Montana law to provide uniform or equitable rates. The Attorney General did note, however, that age discrimination does violate the Montana Human Rights Act (Title 49 Chapter 2). This may be viewed as a warning for cities to consider the appropriateness of qualification by age. A search of other Senior Discount programs around the country showed the majority are associated with an income limit.

Based on the Risk Management concern associated with the potential for claims of age discrimination and based on practices by other utilities, the results of this study include a recommendation to revise the current policy to require qualification for the Low Income Energy Assistance Program (LIEAP) as a requirement for the Low Income/Senior Citizen Discount.

No other revisions to the rate structure are recommended, other than increases associated with achieving revenue adequacy in the near and long-term. These are discussed in Section 6.0.

6.0 Revenue Adequacy Analysis

Revenue adequacy is evaluated to determine the short-term and long-term adequacy of the existing rates, and to propose potential rate adjustments to ensure that the existing rates and any proposed changes do not negatively impact the Utility's financial position in the future. This section summarizes background pertaining to revenue requirements, the assumptions used to evaluate revenue adequacy, specific recommendations for 2017 rates, and projected rates from 2018 to 2026 for the City of Whitefish's Wastewater Utility.

6.1 Financial Model and Assumptions

A ten-year financial model was developed for the Wastewater Utility. The model was built using the City's current operations and funding policies, based upon financial information provided by the City. The model was used to project the net revenue requirements (total revenue requirements less miscellaneous operating and non-operating revenue), revenue generated from proposed rates, and the corresponding revenue surplus or deficiency. Since there is obvious uncertainty associated with projecting into the future, it is recommended that the rate assumptions should be re-evaluated and updated on an annual basis in conjunction with budget and capital planning. The revenue adequacy assumptions are noted below:

O&M Assumptions

- 2017 O&M based on 2016 budget projections.
- 3.0 percent annual inflation rate for General Inflation and Labor costs.
- 5.0 percent annual inflation for Chemicals, Fuel, Electricity, and Insurance.

Capital Assumptions

- CIP projections and based on the Capital Improvements Plan for 2017-2021. To estimate annual cash-funded CIP expenditures for 2022 through 2026, the average value for 2017 through 2021 was used. Annual amounts by funding source include:
    - Cash/Impact Fees:
        - 2017: $775,000
        - 2018: $429,000
        - 2019: $138,500
        - 2020: $180,900
        - 2021: $400,000
        - 2022 through 2026: $400,000 each year
    - State Revolving Fund Loan
        - 2017: $0

- 2018: $0
- 2019: $19,587,500
- 2020: $0
- 2021: $0
- 2022 through 2026: $0 each year

Reserve Assumptions

- An Operating Reserve was funded at a targeted level of 90 days O&M expense.
- A restricted Debt Service Reserve was funded based on existing debt figures provided by the City and values for new or future debt equal to 50 percent of an annual payment.
- A Capital Reserve Fund target equal to 15 percent of the average annual rate-funded capital value was established.
- A Rate Stabilization Fund target equal to 15 percent of annual rate revenue was established.

Funding Assumptions

- State Revolving Loan Fund:
  - Interest Rate: 2.5 percent (City of Whitefish).
  - Term: twenty (20) years.
  - Annual coverage requirement = 110 percent.
  - Annual coverage based on highest year of debt service.
  - Restricted reserve amount equal to 50 percent of annual payment is rolled into loan issue.

Revenue Assumptions

- 2017 usage characteristics based on 2014 accounts and billed flow, indexed:
  - The number of Inside City accounts was indexed by 1.0 percent per year from 2014 to 2016;
  - The number of Outside City accounts was not indexed (new outside users will not be added without annexation); and
  - Billed flow growth for Inside City accounts, Resthaven, and Big Mountain were indexed by 0.5 percent per year from 2014 to 2016.

- It was assumed that the City will revise its Low Income/Senior Citizen Discount policy to require proof of low income eligibility. However, it was unclear as to how

many or what type of Wastewater customers this change would affect. As a result, no discounted users were converted to non-discounted rate accounts. This change can be made the year after the revised policy takes effect when new account numbers become available.

- Annual impact fee revenues projected to hold constant at $200,000.
- Impact Fee administrative revenue calculated as four percent annual impact fee based on 2016 budget projection.
- Other revenues were held constant 2017-2026.

Utility Cash Balance Assumptions

- The capital reserve balance at the end of FY15 was $102,027.
- The unrestricted Wastewater Fund balance at the end of FY15 was $1,556,580.

6.2 Revenue Adequacy Model Projections

The evaluation of the Wastewater Utility revenue adequacy entailed development of two (2) primary rate model scenarios:

- **Baseline Scenario –** This model reflects increasing O&M expenses, growth of both flow and meters, and the incorporation of the CIP, and indexes the rates at an assumed inflationary level of 1.5 percent annually throughout the ten-year planning period. This is the "do nothing" scenario, and serves to illustrate the effect that delaying necessary utility rate increases may have on Utility finances.
- **Rate Adjustment Scenario –** In addition to the adjustments to revenue requirements noted for the Baseline Scenario, this model incorporates recommended adjustments to the utility rates and projects utility finances over the 10-year planning period based on the recommended rate adjustments. In addition to overall revenue adequacy, the rate adjustments account for the following:
    - Cost of service-based adjustments;
    - Reserve balances and targets; and
    - Debt Service coverage.

The Baseline and Rate Adjustment Scenario revenue adequacy models were completed through the year 2026. However, note that revenue and expense requirements for any utility can vary significantly over the course of ten years. It is recommended that the City of Whitefish review and update the model within which the future rate projections have been made on an annual basis

to make adjustments to the rate plan for the coming year, as appropriate.

6.2.1 Baseline Scenario

The Wastewater Utility has been annually indexing rates by an inflationary factor since 2007. In the Baseline Scenario, it is assumed that over the next 10 years, only inflationary increases would be applied annually. A rate of 1.5 percent was assumed. Annual revenue requirements, however, are assumed to grow and a revenue deficiency exists in all but one year. The revenue requirements in this scenario do not include funding of a future WWTP capital reserve.

Because the Utility has an unrestricted cash fund of approximately $1.5 million going into 2016, it is projected that the Utility could maintain some reserves until 2020, when the first debt payment for the WWTP comes due. The results of the Baseline Scenario are summarized in Tables 6.1 and 6.2 and Figure 6.1, which shows that without significant rate increases, the current plan to construct a new WWTP is not viable. Under this scenario, the objective of funding a self-sufficient Wastewater Utility is not met.

	2016	2017	2018	2019	2020	2021
Projected Revenue Requirements						
O&M	$1,887,877	$1,945,860	$2,005,873	$2,067,994	$2,132,301	$2,673,253
Capital (Cash-Funded)	$1,190,250	$775,000	$429,000	$138,500	$180,900	$400,000
Capital (Debt-Funded)	$2,190,527	$0	$0	$19,587,500	$0	$0
Debt Service	$250,541	$338,976	$333,017	$336,197	$1,678,455	$1,679,249
Future WWTP Capital Reserve	$0	$0	$0	$0	$0	$0
Total Revenue Requirements	**$5,519,195**	**$3,059,836**	**$2,767,890**	**$22,130,191**	**$3,991,656**	**$4,752,502**
Projected Income and Funds from Other Sources						
Loan Proceeds	$2,190,527	$0	$0	$19,587,500	$0	$0
Other Revenue	$498,000	$560,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$2,830,668	$2,834,660	$3,218,039	$3,328,163	$3,771,156	$4,532,002
Projected Revenue from Rates	**$2,435,844**	**$2,488,929**	**$2,543,443**	**$2,599,073**	**$2,657,395**	**$2,716,859**
Revenue Surplus/(Deficiency)	($394,823)	($10,407)	($3,947)	$276,883	($1,113,761)	($1,815,143)

Table 6.1: Projected Wastewater Utility Baseline Revenue Adequacy – 2017-2021

	2022	2023	2024	2025	2026
Projected Revenue Requirements					
O&M	$2,760,137	$2,850,007	$2,942,974	$3,039,154	$3,138,666
Capital (Cash-Funded)	$400,000	$400,000	$400,000	$400,000	$400,000
Capital (Debt-Funded)	$0	$0	$0	$0	$0
Debt Service	$1,674,901	$1,668,177	$1,664,930	$1,663,373	$1,665,700
Future WWTP Capital Reserve	$0	$0	$0	$0	$0
Total Revenue Requirements	**$4,835,038**	**$4,918,184**	**$5,007,904**	**$5,102,527**	**$5,204,366**
Projected Income and Funds from Other Sources					
Loan Proceeds	$0	$0	$0	$0	$0
Other Revenue	$220,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$4,614,538	$4,697,684	$4,787,404	$4,882,027	$4,983,866
Projected Revenue from Rates	**$2,778,232**	**$2,840,840**	**$2,905,172**	**$2,970,983**	**$3,037,822**
Revenue Surplus/(Deficiency)	**($1,836,305)**	**($1,856,844)**	**($1,882,232)**	**($1,911,044)**	**($1,946,044)**

Table 6.2: Projected Wastewater Utility Baseline Revenue Adequacy – 2022-2026

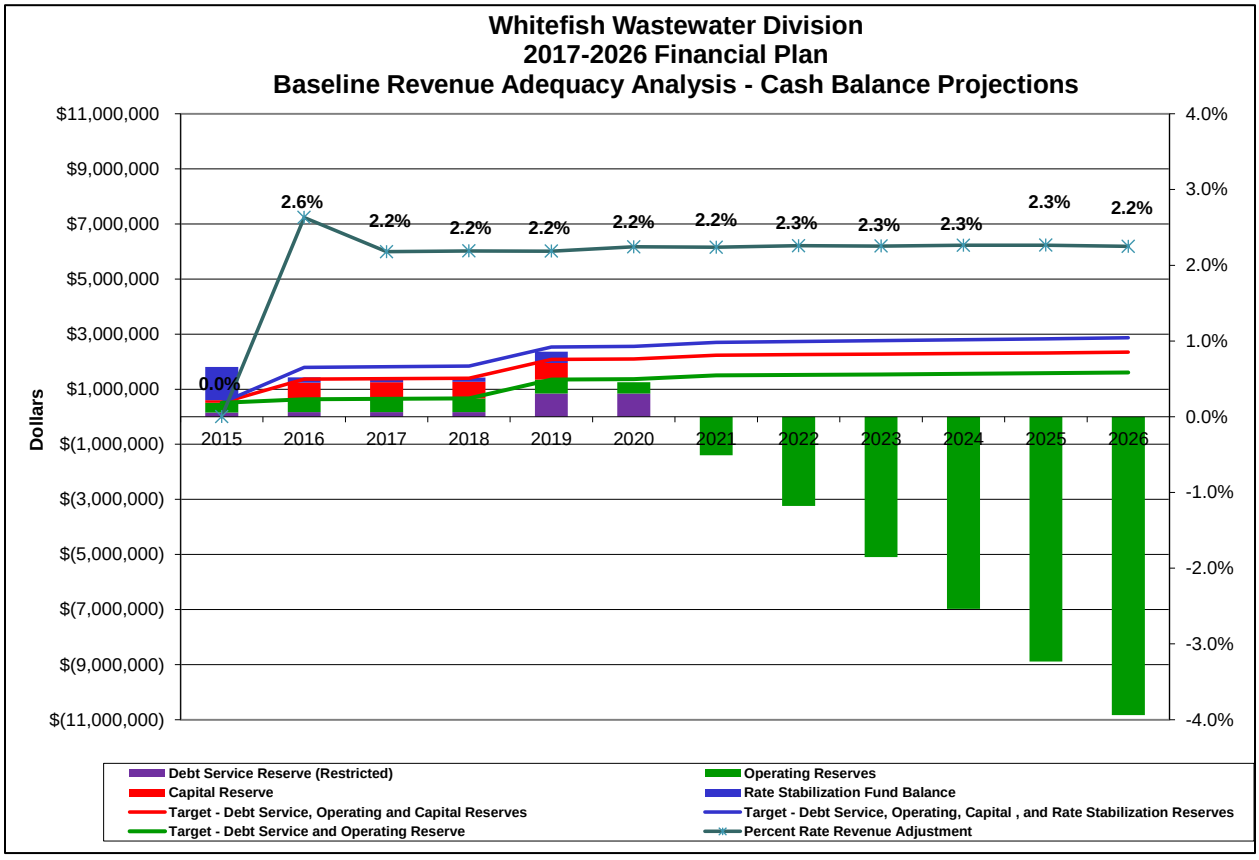

Figure 6.1: Wastewater Utility Cash Balance Projections – Baseline Scenario

6.2.2 Rate Adjustment Scenario and Rate Projections

To address the objectives of meeting revenue requirements, building target reserve levels, and correcting cost of service inequities, the rate projections shown in Tables 6.3 through 6.6 were developed. Based on the implementation of the rate recommendations in Tables 6.3 through 6.6, Tables 6.7 and 6.8 summarize the overall projected revenue adequacy, including the coverage requirement to be achieved. Figure 6.2 depicts the cash balance projections associated with the values in Tables 6.3 through 6.8. It should be noted that although Table 6.7 shows a revenue deficiency exists in 2017 and 2018, it is not a true revenue deficiency, as the revenue requirements in those years include a contribution to capital reserves for the new WWTP. The adjusted overall revenue surplus for these years, in consideration of capital reserve contributions would be $215,146 in 2017 and $493,701 in 2018. Programming in these contributions to capital reserve allows the utility to grow into rates that will support the future WWTP debt payment and associated coverage requirement, and also builds reserve funds that can be used to minimize the rate increases necessary to meet the debt requirement. Overall this strategy enables the Utility to approach its rate plan with steady rate increases that can gradually decrease over the study period.

It should also be noted that in accordance with Montana Law, adjustments to rates for Outside user classes have been linked to adjustments to rates for comparable Inside City users.

User Class	2016 Rates	2017 Recommended	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Inside City Users						
SC-1	$21.17	$21.81	$22.46	$23.13	$23.82	$24.53
SC-2	$37.02	$38.13	$39.27	$40.45	$41.66	$42.91
SC-3	$43.17	$44.47	$45.80	$47.17	$48.59	$50.05
Grinder	$53.94	$55.56	$57.23	$58.95	$60.72	$62.54
STEP	$56.07	$57.75	$59.48	$61.26	$63.10	$64.99
Outside City Users						
SC-1	$24.73	$25.47	$26.23	$27.02	$27.83	$28.66
SC-2	$41.48	$42.72	$44.00	$45.32	$46.68	$48.08
SC-3	$47.58	$49.01	$50.48	$51.99	$53.55	$55.16
Resthaven	$60.18	$61.99	$63.85	$65.77	$67.74	$69.77
Big Mountain	$72.58	$74.76	$77.00	$79.31	$81.69	$84.14

Table 6.3: Wastewater Utility Monthly Base Rate Projections – 2017-2021

User Class	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected
Inside City Users					
SC-1	$25.27	$26.03	$26.81	$27.61	$28.44
SC-2	$44.20	$45.53	$46.90	$48.31	$49.76
SC-3	$51.55	$53.10	$54.69	$56.33	$58.02
Grinder	$64.42	$66.35	$68.34	$70.39	$72.50
STEP	$66.94	$68.95	$71.02	$73.15	$75.34
Outside City Users					
SC-1	$29.52	$30.41	$31.32	$32.26	$33.23
SC-2	$49.52	$51.01	$52.54	$54.12	$55.74
SC-3	$56.81	$58.51	$60.27	$62.08	$63.94
Resthaven	$71.86	$74.02	$76.24	$78.53	$80.89
Big Mountain	$86.66	$89.26	$91.94	$94.70	$97.54

Table 6.4: Wastewater Utility Monthly Base Rate Projections – 2022-2026

User Class	2016 Rates	2017 Recommended	2018 Projected	2019 Projected	2020 Projected	2021 Projected
Inside City Users						
SC-1	$3.55	$4.44	$5.55	$6.94	$8.40	$10.16
SC-2	$6.31	$7.07	$7.92	$8.87	$9.93	$11.12
SC-3	$8.86	$9.92	$10.91	$12.00	$13.20	$14.52
Grinder	$13.47	$14.55	$15.71	$16.97	$18.33	$19.80
STEP	$16.65	$18.32	$20.15	$21.36	$22.64	$24.00
Outside City Users						
SC-1	$5.46	$6.83	$8.54	$10.68	$12.92	$15.63
SC-2	$8.71	$9.76	$10.93	$12.24	$13.71	$15.36
SC-3	$10.54	$11.80	$12.98	$14.28	$15.71	$17.28
Resthaven	$21.47	$23.62	$25.98	$27.54	$29.19	$30.94
Big Mountain	$8.71	$9.76	$10.93	$12.02	$13.22	$14.54

Table 6.5: Wastewater Utility Volumetric Rate Projections – 2017-2021

User Class	2022 Projected	2023 Projected	2024 Projected	2025 Projected	2026 Projected
Inside City Users					
SC-1	$10.36	$10.57	$10.78	$11.00	$11.22
SC-2	$11.34	$11.57	$11.80	$12.04	$12.28
SC-3	$15.39	$16.01	$16.65	$17.32	$18.01
Grinder	$20.99	$21.62	$22.27	$22.94	$23.63
STEP	$25.44	$26.97	$28.59	$28.59	$28.59
Outside City Users					
SC-1	$15.63	$15.63	$15.63	$15.63	$15.63
SC-2	$15.67	$15.98	$16.30	$16.63	$16.96
SC-3	$18.32	$19.05	$19.81	$20.60	$21.42
Resthaven	$32.80	$34.77	$36.86	$36.86	$36.86
Big Mountain	$15.41	$16.03	$16.67	$16.67	$16.67

Table 6.6: Wastewater Utility Volumetric Rate Projections – 2022-2026

	2016	2017	2018	2019	2020	2021
Projected Revenue Requirements						
O&M	$1,887,877	$1,945,860	$2,005,873	$2,067,994	$2,132,301	$2,673,253
Capital (Cash-Funded)	$1,190,250	$775,000	$429,000	$138,500	$180,900	$400,000
Capital (Debt-Funded)	$2,190,527	$0	$0	$19,587,500	$0	$0
Debt Service	$250,541	$338,976	$333,017	$336,197	$1,678,455	$1,679,249
Future WWTP Capital Reserve	$0	$335,324	$670,649	$1,005,973	$0	$0
Total Revenue Requirements	**$5,519,195**	**$3,395,160**	**$3,438,539**	**$23,136,163**	**$3,991,656**	**$4,752,502**
Projected Income and Funds from Other Sources						
Loan Proceeds	$2,190,527	$0	$0	$19,587,500	$0	$0
Other Revenue	$498,000	$560,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$2,830,668	$2,834,660	$3,218,039	$3,328,163	$3,771,156	$4,532,002
Projected Revenue from Rates	**$2,436,156**	**$2,714,483**	**$3,041,090**	**$3,422,787**	**$3,831,790**	**$4,308,042**
Revenue Surplus/(Deficiency)	($394,511)	($120,178)	($176,948)	$94,624	$60,634	($223,960)
Coverage (Target = 110%)	247%	331%	368%	462%	114%	110%

Table 6.7: Projected Wastewater Utility Revenue Adequacy – 2017-2021

	2022	2023	2024	2025	2026
Projected Revenue Requirements					
O&M	$2,760,137	$2,850,007	$2,942,974	$3,039,154	$3,138,666
Capital (Cash-Funded)	$400,000	$400,000	$400,000	$400,000	$400,000
Capital (Debt-Funded)	$0	$0	$0	$0	$0
Debt Service	$1,674,901	$1,668,177	$1,664,930	$1,663,373	$1,665,700
Future WWTP Capital Reserve	$0	$0	$0	$0	$0
Total Revenue Requirements	**$4,835,038**	**$4,918,184**	**$5,007,904**	**$5,102,527**	**$5,204,366**
Projected Income and Funds from Other Sources					
Loan Proceeds	$0	$0	$0	$0	$0
Other Revenue	$220,500	$220,500	$220,500	$220,500	$220,500
Net Revenue Requirements	$4,614,538	$4,697,684	$4,787,404	$4,882,027	$4,983,866
Projected Revenue from Rates	**$4,452,243**	**$4,595,802**	**$4,743,134**	**$4,880,527**	**$5,021,372**
Revenue Surplus/(Deficiency)	($162,294)	($101,882)	($44,270)	($1,501)	$37,506
Coverage (Target = 110%)	113%	117%	120%	122%	125%

Table 6.8: Projected Wastewater Utility Revenue Adequacy – 2022-2026

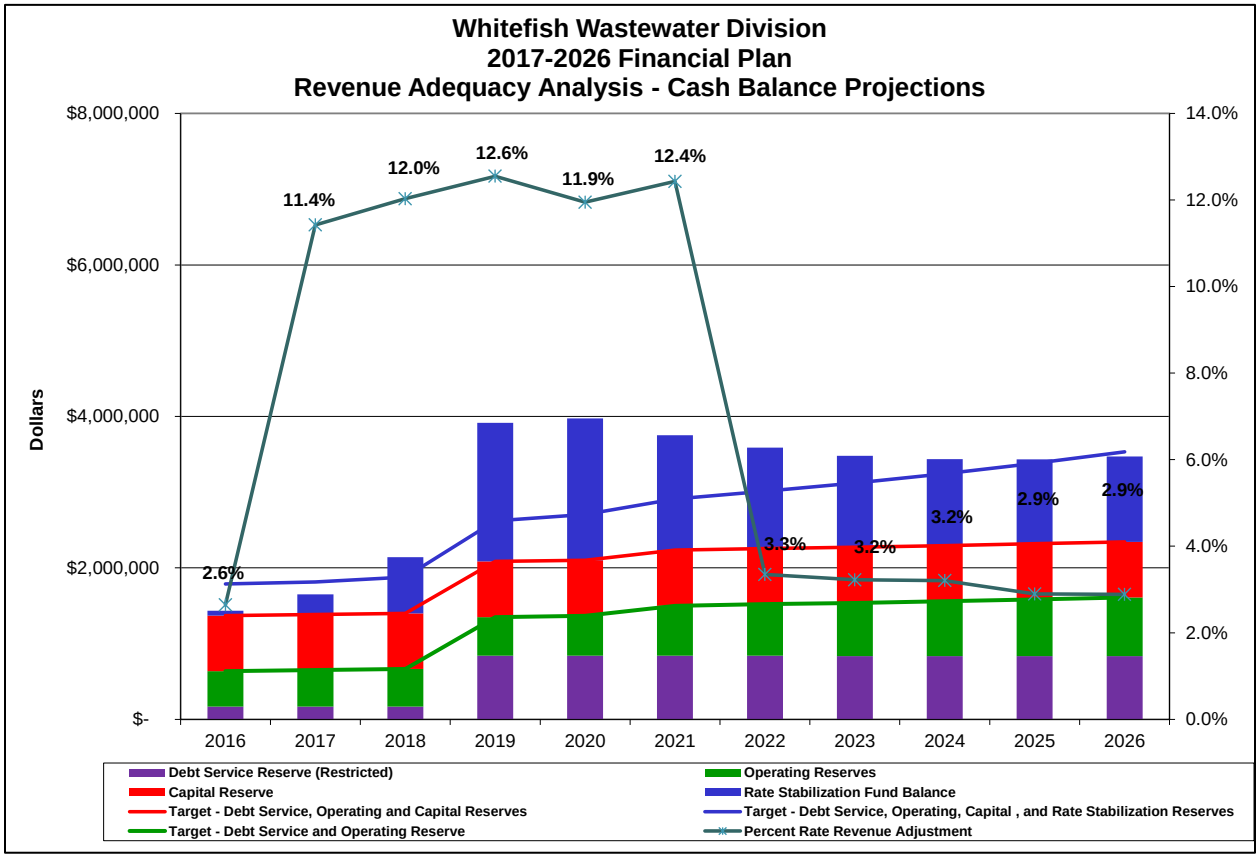

Figure 6.2: Wastewater Utility Cash Balance Projections – Rate Adjustment Scenario

Tables 6.9 and 6.10 summarize the projected annual COSA difference between cost and revenue percentages. The goal is to achieve a percent difference +/- 10 percent. Because the asset base of the Utility changes significantly when the new WWTP is added in 2022, the strategy to correct any COSA inequities focused on the cost percentages for 2022, and to ultimately make correction by 2026. It should be noted that correcting any disparity associated with Outside SC-1 and SC-2 users is difficult for a couple of reasons: 1) changes to the rates are tied to those for similar users inside the City, and 2) they are very small user classes.

	2016	2017	2018	2019	2020	2021
Inside City Users						
SC-1	-9.9%	-6.4%	-3.7%	0.9%	1.1%	1.4%
SC-2	13.7%	7.8%	4.4%	2.4%	-1.6%	-0.2%
SC-3	5.7%	1.2%	0.5%	-0.6%	8.5%	-3.7%
Grinder	3.7%	3.2%	0.5%	-1.0%	0.8%	0.2%
STEP	-9.1%	-4.2%	-12.0%	-21.4%	-28.9%	-5.8%
Outside City Users						
SC-1	-1.2%	2.6%	13.6%	3.8%	38.5%	25.4%
SC-2	26.0%	16.4%	15.4%	0.2%	17.0%	5.8%
Resthaven	-9.3%	-5.6%	-12.0%	-23.4%	-25.1%	-8.8%
Big Mountain	-1.3%	4.2%	6.7%	-5.4%	8.2%	-8.3%

Table 6.9: Projected Difference between Allocated Cost Percentage and Revenue Percentage, 2016-2021

	2022	2023	2024	2025	2026
Inside City Users					
SC-1	**0.8%**	0.4%	0.0%	-0.7%	-0.9%
SC-2	**-0.4%**	-0.5%	-0.7%	0.4%	0.5%
SC-3	**-2.5%**	-2.0%	-0.3%	0.2%	1.0%
Grinder	**1.8%**	1.7%	1.4%	1.2%	1.4%
STEP	**-4.3%**	-2.3%	-0.4%	-1.9%	1.1%
Outside City Users					
SC-1	**24.3%**	23.1%	21.9%	20.3%	19.3%
SC-2	**7.0%**	8.0%	9.0%	11.3%	12.5%
Resthaven	**-7.0%**	-4.9%	-2.9%	-2.7%	0.8%
Big Mountain	**-3.9%**	-1.2%	1.5%	1.3%	0.2%

Table 6.9: Projected Difference between Allocated Cost Percentage and Revenue Percentage, 2022-2026

6.2.3 Wastewater Bill Impacts

To provide perspective on the magnitude of the rate projections in Tables 6.3 through 6.6, bill impacts have been estimated for average wastewater use values specific to each type of user. Table 6.10 presents the monthly change in dollar amount associated with rate projections. The change is compared to the monthly charge for the amount of billed wastewater listed in the second column. The calculation has been completed for each year, with reference back to FY16. Therefore, the monthly increase in the last column represents the projected monthly increase in 2026 as compared to the monthly charge in 2016. Table 6.11 presents the same information in percentage format.

	Avg Monthly Gallons	Existing Bill FY16	2017 Monthly Increase from 2016	2018 Monthly Increase from 2016	2019 Monthly Increase from 2016	2020 Monthly Increase from 2016	2021 Monthly Increase from 2016	2022 Monthly Increase from 2016	2023 Monthly Increase from 2016	2024 Monthly Increase from 2016	2025 Monthly Increase from 2016	2026 Monthly Increase from 2016
SC-1												
Inside	3,000	$ 31.82	$ 3.31	$ 7.29	$ 12.13	$ 17.20	$ 23.19	$ 24.53	$ 25.92	$ 27.33	$ 28.79	$ 30.28
Inside Low Income	3,000	$ 15.94	$ 2.83	$ 6.32	$ 10.66	$ 15.21	$ 20.67	$ 21.45	$ 22.27	$ 23.10	$ 23.96	$ 24.83
Outside	3,000	$ 41.11	$ 4.85	$ 10.74	$ 17.95	$ 25.48	$ 34.44	$ 35.30	$ 36.19	$ 37.10	$ 38.04	$ 39.01
Inside	6,000	$ 42.47	$ 5.98	$ 13.29	$ 22.30	$ 31.75	$ 43.02	$ 44.96	$ 46.98	$ 49.02	$ 51.14	$ 53.29
Inside Low Income	6,000	$ 26.59	$ 5.50	$ 12.32	$ 20.83	$ 29.76	$ 40.50	$ 41.88	$ 43.33	$ 44.79	$ 46.31	$ 47.84
Outside	6,000	$ 57.49	$ 8.96	$ 19.98	$ 33.61	$ 47.86	$ 64.95	$ 65.81	$ 66.70	$ 67.61	$ 68.55	$ 69.52
SC-2												
Inside	3,000	$ 55.95	$ 3.39	$ 7.08	$ 11.11	$ 15.50	$ 20.32	$ 22.27	$ 24.29	$ 26.35	$ 28.48	$ 30.65
Inside Low Income	3,000	$ 28.20	$ 2.56	$ 5.40	$ 8.55	$ 12.03	$ 15.91	$ 16.89	$ 17.91	$ 18.94	$ 20.01	$ 21.09
Outside	3,000	$ 67.61	$ 4.39	$ 9.18	$ 14.43	$ 20.20	$ 26.55	$ 28.92	$ 31.34	$ 33.83	$ 36.40	$ 39.01
Inside	6,000	$ 74.88	$ 5.67	$ 11.91	$ 18.79	$ 26.36	$ 34.75	$ 37.36	$ 40.07	$ 42.82	$ 45.67	$ 48.56
Inside Low Income	6,000	$ 47.13	$ 4.84	$ 10.23	$ 16.23	$ 22.89	$ 30.34	$ 31.98	$ 33.69	$ 35.41	$ 37.20	$ 39.00
Outside	6,000	$ 93.74	$ 7.54	$ 15.84	$ 25.02	$ 35.20	$ 46.50	$ 49.80	$ 53.15	$ 56.60	$ 60.16	$ 63.76
SC-3												
Inside	3,000	$ 69.75	$ 4.48	$ 8.78	$ 13.42	$ 18.44	$ 23.86	$ 27.97	$ 31.38	$ 34.89	$ 38.54	$ 42.30
Inside Low Income	3,000	$ 37.37	$ 3.50	$ 6.80	$ 10.41	$ 14.36	$ 18.68	$ 21.66	$ 23.91	$ 26.23	$ 28.65	$ 31.14
Inside	6,000	$ 96.33	$ 7.66	$ 14.93	$ 22.84	$ 31.46	$ 40.84	$ 47.56	$ 52.83	$ 58.26	$ 63.92	$ 69.75
Inside Low Income	6,000	$ 63.95	$ 6.68	$ 12.95	$ 19.83	$ 27.38	$ 35.66	$ 41.25	$ 45.36	$ 49.60	$ 54.03	$ 58.59
Grinder												
Inside	3,000	$ 94.35	$ 4.86	$ 10.01	$ 15.51	$ 21.36	$ 27.59	$ 33.04	$ 36.86	$ 40.80	$ 44.86	$ 49.04
Inside Low Income	3,000	$ 53.90	$ 3.64	$ 7.54	$ 11.75	$ 16.27	$ 21.14	$ 25.18	$ 27.55	$ 30.00	$ 32.52	$ 35.12
Inside	6,000	$ 134.76	$ 8.10	$ 16.73	$ 26.01	$ 35.94	$ 46.58	$ 55.60	$ 61.31	$ 67.20	$ 73.27	$ 79.52
Inside Low Income	6,000	$ 94.31	$ 6.88	$ 14.26	$ 22.25	$ 30.85	$ 40.13	$ 47.74	$ 52.00	$ 56.40	$ 60.93	$ 65.60
STEP												
Inside	3,000	$ 106.02	$ 6.69	$ 13.91	$ 19.32	$ 25.00	$ 30.97	$ 37.24	$ 43.84	$ 50.77	$ 52.90	$ 55.09
Resthaven	3,000	$ 124.59	$ 8.26	$ 17.20	$ 23.80	$ 30.72	$ 38.00	$ 45.67	$ 53.74	$ 62.23	$ 64.52	$ 66.88
Inside	6,000	$ 155.97	$ 11.70	$ 24.41	$ 33.45	$ 42.97	$ 53.02	$ 63.61	$ 74.80	$ 86.59	$ 88.72	$ 90.91
Resthaven	6,000	$ 189.00	$ 14.71	$ 30.73	$ 42.01	$ 53.88	$ 66.41	$ 79.66	$ 93.64	$ 108.40	$ 110.69	$ 113.05
Big Mountain												
Big Mountain	1,470,000	$ 12,876.28	$ 1,545.68	$ 3,267.82	$ 4,872.43	$ 6,638.81	$ 8,581.66	$ 9,863.08	$ 10,777.08	$ 11,720.56	$ 11,723.32	$ 11,726.16

Table 6.10: Monthly Wastewater Rate Increase Associated with Projected Rate Adjustments – Referenced to FY16

	Avg Monthly Gallons	Existing Bill FY16	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
			% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016	% Increase from 2016
SC-1												
Inside	3,000	$ 31.82	10.4%	22.9%	38.1%	54.1%	72.9%	77.1%	81.5%	85.9%	90.5%	95.2%
Inside Low Income	3,000	$ 15.94	17.8%	39.6%	66.9%	95.4%	129.7%	134.6%	139.7%	144.9%	150.3%	155.8%
Outside	3,000	$ 41.11	11.8%	26.1%	43.7%	62.0%	83.8%	85.9%	88.0%	90.2%	92.5%	94.9%
Inside	6,000	$ 42.47	14.1%	31.3%	52.5%	74.8%	101.3%	105.9%	110.6%	115.4%	120.4%	125.5%
Inside Low Income	6,000	$ 26.59	20.7%	46.3%	78.3%	111.9%	152.3%	157.5%	163.0%	168.4%	174.2%	179.9%
Outside	6,000	$ 57.49	15.6%	34.8%	58.5%	83.2%	113.0%	114.5%	116.0%	117.6%	119.2%	120.9%
SC-2												
Inside	3,000	$ 55.95	6.1%	12.7%	19.9%	27.7%	36.3%	39.8%	43.4%	47.1%	50.9%	54.8%
Inside Low Income	3,000	$ 28.20	9.1%	19.1%	30.3%	42.7%	56.4%	59.9%	63.5%	67.2%	71.0%	74.8%
Outside	3,000	$ 67.61	6.5%	13.6%	21.3%	29.9%	39.3%	42.8%	46.4%	50.0%	53.8%	57.7%
Inside	6,000	$ 74.88	7.6%	15.9%	25.1%	35.2%	46.4%	49.9%	53.5%	57.2%	61.0%	64.9%
Inside Low Income	6,000	$ 47.13	10.3%	21.7%	34.4%	48.6%	64.4%	67.9%	71.5%	75.1%	78.9%	82.7%
Outside	6,000	$ 93.74	8.0%	16.9%	26.7%	37.6%	49.6%	53.1%	56.7%	60.4%	64.2%	68.0%
SC-3												
Inside	3,000	$ 69.75	6.4%	12.6%	19.2%	26.4%	34.2%	40.1%	45.0%	50.0%	55.3%	60.6%
Inside Low Income	3,000	$ 37.37	9.4%	18.2%	27.9%	38.4%	50.0%	58.0%	64.0%	70.2%	76.7%	83.3%
Inside	6,000	$ 96.33	8.0%	15.5%	23.7%	32.7%	42.4%	49.4%	54.8%	60.5%	66.4%	72.4%
Inside Low Income	6,000	$ 63.95	10.4%	20.3%	31.0%	42.8%	55.8%	64.5%	70.9%	77.6%	84.5%	91.6%
Grinder												
Inside	3,000	$ 94.35	5.2%	10.6%	16.4%	22.6%	29.2%	35.0%	39.1%	43.2%	47.5%	52.0%
Inside Low Income	3,000	$ 53.90	6.8%	14.0%	21.8%	30.2%	39.2%	46.7%	51.1%	55.7%	60.3%	65.2%
Inside	6,000	$ 134.76	6.0%	12.4%	19.3%	26.7%	34.6%	41.3%	45.5%	49.9%	54.4%	59.0%
Inside Low Income	6,000	$ 94.31	7.3%	15.1%	23.6%	32.7%	42.6%	50.6%	55.1%	59.8%	64.6%	69.6%
STEP												
Inside	3,000	$ 106.02	6.3%	13.1%	18.2%	23.6%	29.2%	35.1%	41.4%	47.9%	49.9%	52.0%
Resthaven	3,000	$ 124.59	6.6%	13.8%	19.1%	24.7%	30.5%	36.7%	43.1%	49.9%	51.8%	53.7%
Inside	6,000	$ 155.97	7.5%	15.7%	21.4%	27.6%	34.0%	40.8%	48.0%	55.5%	56.9%	58.3%
Resthaven	6,000	$ 189.00	7.8%	16.3%	22.2%	28.5%	35.1%	42.1%	49.5%	57.4%	58.6%	59.8%
Big Mountain												
Big Mountain	1,470,000	$ 12,876.28	12.0%	25.4%	37.8%	51.6%	66.6%	76.6%	83.7%	91.0%	91.0%	91.1%

Table 6.11: Monthly Wastewater Rate Percentage Increase Associated with Projected Rate Adjustments – Referenced to FY16

7.0 Recommendations

In addition to the rate adjustment recommendations presented in Section 6.2, the following general recommendations were developed in conjunction with completion of the Wastewater Utility Financial Plan and Rate Study:

- **Adopt a revised approach to the Service Classes.** Based on discussions with City Staff and Council Members, it is recommended that the City revise the lift station classifications as shown in Figure 4.1. The COSA completed as part of this study followed this approach.
- **Implement near-term adjustments to prepare the Utility for debt associated with the new WWTP.** By gradually increasing revenue requirements with the goal of generating adequate revenue to meet debt service and coverage requirements by 2020, the City can show a proactive approach to managing Utility finances. In the interim, reserve funds can be built that can potentially minimize necessary future rate increase, provided that coverage can be met at that time.
- **Closely monitor coverage as the new debt service comes online.** The required coverage associated with debt for the new WWTP will require rate increases beyond what is necessary to simply meet the debt payment.
- **Strive to correct cost of service inequities as adjustments are made to meet annual revenue requirements.** By implementing the recommended changes to the wastewater rates, the City will be making an effort to rectify any existing cost of service inequities. By updating usage characteristics, revenue requirements, and asset values on an annual basis, the model will make adjustments to the COSA relationships. This will be important when the new WWTP facility comes online. The model is currently set up based on projected asset values.
- **Link annual Outside user rate adjustments to adjustments to Inside user rates.** It is recommended that City continue to adjust rates to Outside users consistent with those to Inside users. Due to the relatively small number of Outside users, it is very difficult to correct any cost of service disparity.
- **Review Wastewater Revenue Adequacy annually.** The City of Whitefish has undertaken this project to develop a financial tool to assist in managing the financial health of the Wastewater Utility. Although the projections herein contain proposed rate adjustments through 2026, a change in actual revenues or expenses from those projected could significantly impact the Utility. As a result, it is strongly recommended that the City closely monitor revenues and expenses as compared to

those projected in the rate model, making adjustments as necessary, and update the projected rate adjustments based on the desired objective of achieving consistent revenue adequacy and meeting cash reserve target balances.

- **Continue pursuit of grant dollars for construction of the new WWTP.** The City is actively exploring potential grant funds for the WWTP construction. As grant dollars are acquired, future projections can be adjusted to reflect reduced revenue requirements.
- **Monitor near-term revenue stability.** As the City implements rate increases designed to meet future debt service requirements, there is the potential for some users to decrease water use in an overall effort to lower the utility bill. Therefore, the City should closely monitor revenue stability associated with these multi-year changes.
- **Establish Target Levels and Fund Operating Reserves.** In addition to Debt Service reserves required by bond covenants, it is recommended that the City strive to achieve and maintain the following reserve levels:
    - Operating Reserves: Target = 90 days of operating expenses
    - Capital Reserve: Target = 15 percent of average annual cash-funded capital expenditures
    - Rate Stabilization: Target = 15 percent of annual rate revenue.
- **Continue the policy of rate indexing as a minimum annual adjustment.** Although future rate adjustment projections contained herein are, for some user classes, less than average inflation, it is recommended that the City maintain its rate indexing policy, even though it is likely with an up-to-date financial model that in most years the City will be able to specifically dial in the necessary percentage.
- **Revise the existing Low Income/Senior Discount Policy.** It is recommended that the City revise its policy to require income-based qualification through the LIEAP to receive the discounted Utility rates.
- **Proactively communicate changes to the rate structure and increases to the periodic utility bills to the public.** It is recommended that once the City has approved Utility rates for 2017, it continue its proactive community outreach program to educate customers as to the new rates and rate impacts. It is suggested that outreach efforts involve information on the City website, press releases, and mailings. Table 6.10 presents the monthly change in dollar amount associated with wastewater rate projections. The change is compared to the monthly charge for the amount of wastewater listed in the second column. The calculation has been completed for each

year, with reference back to FY16 charges for service. Therefore, the monthly increase in the last column represents the projected monthly increase in 2026 as compared to the monthly charge in 2016. Table 6.11 presents the same information in percentage format.