Municipality of Skagway, Alaska

WATER, WASTEWATER, SOLID WASTE AND HARBOR RATE STUDY

REPORT | June 2015

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June 29, 2015

Michelle Gihl
Administrative Assistance / Deputy Clerk
Municipality of Skagway
P.O. Box 415
Skagway, AK 99840

Subject: Water, Wastewater, Solid Waste and Harbor Rate Study Draft Report

Dear Ms. Gihl:

FCS GROUP is pleased to submit our Water, Wastewater, Solid Waste, and Harbor Service Rate Study prepared for the Municipality of Skagway (Municipality). This serves as the report transmittal and executive summary of the study objectives, assumptions, findings and recommendations. Comprehensive detail is provided in the study report and technical appendices.

A. BACKGROUND

The Municipality engaged FCS GROUP to perform a comprehensive rate study of its Water, Wastewater, Solid Waste, and Harbor utilities to assist the Municipality in maintaining financially stable utilities and promote a fair and equitable allocation of system costs to its customers. The scope of this study included the following major elements:

- Evaluate financial policies, and recommend new or revised policies as warranted.
- Assess revenue needs for a multi-year period that include adequate coverage for operations and maintenance, capital projects, debt service, and other program activities.
- Conduct a cost of service rate analysis with a focus on an equitable allocation of system costs to the different customer classes served by the systems.
- Evaluate alternative rate structures and recommend improvements as warranted.
- Document and present study findings.

These scope elements are addressed throughout each section of the report.

B. STUDY METHODOLOGY AND APPROACH

The methods used to complete our work are based on analytical principals that are generally accepted and widely followed throughout the industry – rates should generate enough revenue to maintain self-supporting and financially viable utilities without undue discrimination toward or against any customer.

Consistent with industry guidelines, this study evaluated utility financial policies; determined annual rate revenue requirements for the period of analysis (2015-2025); distributed utility costs to customer classes; and adjusted rate structures to recover costs and meet Municipality pricing objectives.

The **Revenue Requirement Forecast** determines the amount of annual revenue needed to be generated by user rates – it addresses the level, rather than the structure, of the rates. The analysis incorporates financial policies and forecasts of operating revenues and expenditures, capital funding needs, and any other identified revenues or expenses related to utility operations. Alternative rate adjustment strategies were developed for each utility to fund all utility financial obligations with varying levels of General Fund subsidy.

The **Cost of Service Analysis** provides an analytical basis for assigning costs to customers. An evaluation of use and demand patterns by customer class and a detailed cost allocation process was performed to determine customer class "cost shares" based on the respective use of the systems. Additional customer classes were established to better reflect unique service requirements and enhance customer class equity.

The **Rate Design** reviews existing rate structures and suggests alternative rate structures to assist the Municipality in achieving desired outcomes. Additional charges, as requested by staff, are included in the rate design section.

The following financial policies were incorporated into the study:

- *Fund Accounting* – Cash reserves are a necessary and appropriate part of prudent utility management and ongoing operations. Segregation of monies should be established within each utility to help ensure application of funds to the appropriate purpose. Utility expenditures can be categorized as operating or capital. Operating budgets are primarily funded by ongoing service charges, while capital budgets are funded through debt proceeds, grants, and developer contributions. In addition to service charges, the Municipality's utilities receive support from sales and excise tax revenues. Revenue requirement scenarios were developed with varying levels of this funding:
  - *Scenario 1: Baseline Analysis* – Funds all forecasted utility operations with the continued use of sales/ excise tax revenue support as necessary to maintain utility rates and charges at existing levels throughout the study period.
  - *Scenario 2: Combination of Sales and Tax Revenues Support and Utility Rate Increases* – Funds all forecasted utility obligations using a combination of sales / excise tax revenue support and increases to rates over the study period.
  - *Scenario 3: Rate Increases Only* – Funds all forecasted utility obligations with necessary increases to utility rates over the study period. Eliminates the tax revenue support beyond the current year.
- *Operating and Capital Cash Reserves* – Industry practice for operating (working capital) reserves ranges from 30 to 120 days of O&M, with the lower end more appropriate for utilities with very stable revenue streams and the higher end more appropriate for utilities with significant seasonal variations. Given that the majority of the Municipality's customers are charged on a flat-rate basis, industry best practice would suggest a working capital balance of 30 to 45 days of O&M for each utility.

  The combined water/sewer reserves were split equally between the utilities and assigned to the operating account. The water utility balance reduces from about 178 days of O&M expense to about 125 days by the end of the study period. The sewer utility balance reduces from about 73 days of O&M expense to about 50 to 60 days by the end of the study period, depending on scenario. The balances were used to help buy down rate increases over the study period. While the solid waste utility showed a negative ending fund balance in 2014, it is forecasted to end 2015 at about 38 days of O&M expense, and ends the study period at 27 or 40 days, depending on the scenario.

Harbor reserves were allocated to cover the current year's capital spending, with the remainder assigned to the operating account. The current level is about 1200 days of O&M expense and was used to buy down rate increases, ending the study period at 30 days of O&M.

Common industry practice is to establish a minimum capital balance equal to 1% or 2% of system fixed assets. No capital projects beyond those in the current year have been identified over the study period. Given the level of tax revenue support and rate increases necessary to fund operating expenses, a separate capital contingency reserve was not funded for this study period. It is recommended to be re-evaluated in the next rate study update.

- *Rate-Funded Capital Replacement* – The purpose of rate-funded capital reinvestment is to provide for the replacement of aging system facilities to ensure sustainability of the systems for ongoing operations. Industry best practice suggests a minimum level of funding from rates equal to annual depreciation expense. The municipality has not historically funded system reinvestment, and this study does not incorporate rate-funded capital replacement during this study period. Similar to the capital contingency reserve, it is recommended to be re-evaluated in the next rate study update. Some federal and state grant and loan programs are now requiring utilities to fund some level of system reinvestment as a criterion for eligibility. Furthermore, bond underwriters consider an agency's policy for system reinvestment funding as part of the assessment of a utility's ability to sustain operations, provide reasonable rates to customers, and repay the bond.
- *Debt Management* – Debt financing is one appropriate tool for capital funding by smoothing costs of the capital program over time, versus "pay-as-you-go" funding. However, the debt service becomes a long term part of the budget, so debt levels should be monitored to ensure the system is not overly reliant on it. Debt coverage is another consideration, meaning some debt instruments require the agency to collect enough system revenues to pay all operating expenses, debt service, and an additional multiple of debt service. The Municipality does not have any coverage requirements on its existing debt or proposed future debt.

Detail of these financial policies, along with their best practice and policy thresholds are described further in Section 2 of the report.

C. STUDY ASSUMPTIONS AND FINDINGS

1. Water Utility

- Capital projects of $1.4 million have been identified for the current year. Funding is through tax revenues and an ADEC loan. There is no additional capital budgeted for the remainder of the study period.
- Debt service payments from the ADEC loan are projected at about $15,300 per year through the study period, based on an interest rate of 1.5% and 20-year repayment schedule.
- Operating & maintenance costs are projected to increase from $362,000 to $519,000 by the end of the study period. Costs increase with inflation, ranging from 2.2% to 10.0% depending on the category of expense. Detail is shown in the report technical appendix.
- Revenue under existing rates is conservatively forecasted to remain constant throughout the study period, at around $338,000 per year.

- Revenue projections under existing rates are not adequate to meet the forecasted needs of the utility over the study period. Three scenarios were developed to meet cash obligations. Additional detail is shown in the technical appendix.
  - *Scenario 1: Baseline Analysis*
    This scenario maintains rates at existing levels and the sales/excise tax revenues ("General Fund transfer") covers the remaining revenue shortfall, totaling $925,000 over the study period.

Exhibit ES-1: Scenario 1 - Water Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715
General Fund Transfer	41,631	21,028	34,087	47,771	62,124	77,190	93,021	109,670	127,198	145,669	165,152
Non-Rate Revenues	29,066	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015
Total Revenues	**$ 409,412**	**$ 389,758**	**$ 402,817**	**$ 416,501**	**$ 430,854**	**$ 445,920**	**$ 461,751**	**$ 478,400**	**$ 495,928**	**$ 514,399**	**$ 533,882**
Expenses											
Cash Operating Expenses	$ 361,972	$ 374,445	$ 387,504	$ 401,188	$ 415,540	$ 430,607	$ 446,437	$ 463,087	$ 480,615	$ 499,085	$ 518,569
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-
New Debt Service	-	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 361,972**	**$ 389,758**	**$ 402,817**	**$ 416,501**	**$ 430,854**	**$ 445,920**	**$ 461,751**	**$ 478,400**	**$ 495,928**	**$ 514,399**	**$ 533,882**
Annual Surplus / (Deficiency)	**$ 47,440**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	-	-	-
Net Surplus / (Deficiency)	**$ 47,440**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Cumulative Annual Rate Adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Rate Revenues After Rate Increase	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715
Full Year Rate Revenues After Rate Increase	338,715	338,715	338,715	338,715	338,715	338,715	338,715	338,715	338,715	338,715	338,715
Net Cash Flow After Rate Increase	47,440	-	-	-	-	-	-	-	-	-	-

- *Scenario 2: Combination of Tax Revenues Support and Utility Rate Increases*
  This scenario increases rates equal to annual general inflation with sales/excise tax revenues covering the remaining revenue shortfall. Tax support totals $312,000 over the study period.

Exhibit ES-2: Scenario 2 - Water Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715
General Fund Transfer	41,631	10,867	13,459	16,363	19,612	23,241	27,292	31,808	36,839	42,437	48,663
Non-Rate Revenues	29,066	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015
Total Revenues	**$ 409,412**	**$ 379,597**	**$ 382,189**	**$ 385,093**	**$ 388,342**	**$ 391,971**	**$ 396,022**	**$ 400,538**	**$ 405,569**	**$ 411,167**	**$ 417,393**
Expenses											
Cash Operating Expenses	$ 361,972	$ 374,445	$ 387,504	$ 401,188	$ 415,540	$ 430,607	$ 446,437	$ 463,087	$ 480,615	$ 499,085	$ 518,569
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-
New Debt Service	-	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 361,972**	**$ 389,758**	**$ 402,817**	**$ 416,501**	**$ 430,854**	**$ 445,920**	**$ 461,751**	**$ 478,400**	**$ 495,928**	**$ 514,399**	**$ 533,882**
Annual Surplus / (Deficiency)	**$ 47,440**	**$ (10,161)**	**$ (20,628)**	**$ (31,408)**	**$ (42,512)**	**$ (53,949)**	**$ (65,728)**	**$ (77,862)**	**$ (90,359)**	**$ (103,231)**	**$ (116,490)**
Net Revenue from Rate Increases	-	10,161	20,628	31,408	42,512	53,949	65,728	77,862	90,359	103,231	116,490
Net Surplus / (Deficiency)	**$ 47,440**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	0.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%
Cumulative Annual Rate Adjustment	0.00%	3.00%	6.09%	9.27%	12.55%	15.93%	19.41%	22.99%	26.68%	30.48%	34.39%
Rate Revenues After Rate Increase	$ 338,715	$ 348,877	$ 359,343	$ 370,123	$ 381,227	$ 392,664	$ 404,444	$ 416,577	$ 429,074	$ 441,946	$ 455,205
Full Year Rate Revenues After Rate Increase	338,715	348,877	359,343	370,123	381,227	392,664	404,444	416,577	429,074	441,946	455,205
Net Cash Flow After Rate Increase	47,440	-	-	-	-	-	-	-	-	-	-

- *Scenario 3: Rate Increases Only*
  This scenario forecasts rate increases of about 6% in 2016, followed by annual increases of 4% per year. The cumulative increase is just under 50% over the study period.

Exhibit ES-3: Scenario 3 - Water Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715	$ 338,715
General Fund Transfer	41,631	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	29,066	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015	30,015
Total Revenues	**$ 409,412**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**	**$ 368,730**
Expenses											
Cash Operating Expenses	$ 361,972	$ 374,445	$ 387,504	$ 401,188	$ 415,540	$ 430,607	$ 446,437	$ 463,087	$ 480,615	$ 499,085	$ 518,569
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	-	-	-	-	-	-	-	-	-	-	-
New Debt Service	-	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313	15,313
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 361,972**	**$ 389,758**	**$ 402,817**	**$ 416,501**	**$ 430,854**	**$ 445,920**	**$ 461,751**	**$ 478,400**	**$ 495,928**	**$ 514,399**	**$ 533,882**
Annual Surplus / (Deficiency)	**$ 47,440**	**$ (21,028)**	**$ (34,087)**	**$ (47,771)**	**$ (62,124)**	**$ (77,190)**	**$ (93,021)**	**$ (109,670)**	**$ (127,198)**	**$ (145,669)**	**$ (165,152)**
Net Revenue from Rate Increases	-	21,028	34,087	47,771	62,124	77,190	93,021	109,670	127,198	145,669	165,152
Net Surplus / (Deficiency)	**$ 47,440**	**$ 0**	**$ 0**	**$ 0**	**$ 0**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**6.21%**	**3.63%**	**3.67%**	**3.71%**	**3.76%**	**3.81%**	**3.86%**	**3.91%**	**3.96%**	**4.02%**
Cumulative Annual Rate Adjustment	**0.00%**	**6.21%**	**10.06%**	**14.10%**	**18.34%**	**22.79%**	**27.46%**	**32.38%**	**37.55%**	**43.01%**	**48.76%**
Rate Revenues After Rate Increase	$ 338,715	$ 359,743	$ 372,802	$ 386,487	$ 400,839	$ 415,905	$ 431,736	$ 448,385	$ 465,913	$ 484,384	$ 503,868
Full Year Rate Revenues After Rate Increase	338,715	359,743	372,802	386,487	400,839	415,905	431,736	448,385	465,913	484,384	503,868
Net Cash Flow After Rate Increase	47,440	-	-	-	-	-	-	-	-	-	-

- The operating account balance above the maximum target is used to supplement annual rate revenues and smooth rate increases over the study period, as discussed in the financial policies section of the report. The balance ends at $177,000 (125 days of O&M expense) in each scenario. There is no capital account balance maintained during the study period.
- The cost of service analysis is performed for 2015 as a revenue neutral test year. Rate increases from the selected revenue requirement scenario would be applied to the calculated cost of service rates.
- The cost allocation process distributes utility-wide costs by functional components to the customer classes based on the relative demand placed on the water system by each class. System assets were categorized as supply and treatment; storage; transmission; distribution; pumping; hydrants; and general plant. Asset categories, along with a detailed review of operating & maintenance costs, were assigned to functional components. Functional components include: customer; base (average) demand; peak demand; and fire protection. Customer costs are allocated in proportion to number of accounts; base demand costs in proportion to total use; peak demand in proportion to summer season use; and fire protection in proportion to fire flow requirements. Results are shown below:

Exhibit ES-4: Distribution of Water System Costs to Customer Classes

Functional Categories:	Customer	Base Demand	Peak Demand	Fire Protection	Total
Allocation Basis:	*No. of Accounts*	*Annual Use*	*Summer Use [a]*	*Wtd Meter Equiv. [b]*	
Residential Base	76.9%	35.4%	23.0%	41.9%	33.2%
Residential Surcharge	0.0%	2.0%	1.3%	0.0%	1.5%
Commercial Base	22.9%	21.9%	15.7%	58.1%	22.8%
Commercial Surcharge	0.0%	4.2%	3.0%	0.0%	3.3%
Dock Water	0.2%	36.5%	57.0%	0.0%	39.1%
TOTAL	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

[a] Summer period use [June-Sept]
[b] Fire flow requirements weighted by accounts & flow

- Customer class categories include: residential, commercial, dock water, and hauled water customers (evaluated separately).
- The cost of service analysis indicates that residential and dock water customers are paying more than their share of costs, while commercial customers are paying less than their share of costs. Per Municipal staff direction, the cost of service downward adjustment for dock water was reallocated to the commercial class to mitigate commercial customer impacts.

Exhibit ES-5: Comparison of Water Rate Revenue Distribution by Customer Class

	Cost of Service			Adjusted Cost of Service		
Customer Classes	Revenue under Existing Rates	FYE 2015 Cost of Service	Increase / (Decrease)	Cost of Service Adjustment	FYE 2015 Adjusted Cost of Service	Adjusted Increase / (Decrease)
Residential Base	$ 113,614	$ 112,532	-1.0%	$ -	$ 112,532	-1.0%
Residential Surcharge	6,434	5,229	-18.7%	-	5,229	-18.7%
Commercial Base	54,577	77,261	41.6%	(20,483)	56,778	4.0%
Commercial Surcharge	10,378	11,277	8.7%	(812)	10,465	0.8%
Dock Water	153,712	132,416	-13.9%	21,295	153,712	0.0%
TOTAL	**$ 338,715**	**$ 338,715**	**0.0%**	**$ -**	**$ 338,715**	**0.0%**

- It is important to note that significant estimating techniques were used to derive water usage for unmetered customers. This included a review of actual water production records, metered dock water records, and use of data from other Alaska communities, industry standards, consultant judgment and discussions with Municipality staff. While we believe our estimates produced reasonable results, true demand patterns cannot be ascertained without actual metered data for all customers. Additional details of the estimates can be found in Section 4 of the report.
- Potential water rate adjustments were designed based on discussions with Municipality staff. Options were provided to: (1) maintain the existing structure and increase indicated utility-wide rate increases across-the-board to each existing rate component for all rates; or (2) maintain the

existing structure and apply class-specific cost of service rate increases to each rate component for each customer class. New charges are incorporated into the proposed rate schedules for seasonal customers and hauled water customers:

- Seasonal customers have utility service during the two summer quarters only, but infrastructure and staff are in place to serve them year round. A range of charges from 10% to 80% can be justified for the winter quarters. Municipality staff selected a charge of 10% of the full quarterly charge to reflect system availability.
- Hauled water customers are responsible for bringing water to their residences and businesses up the hill from the water system. They do not use the pumping system, distribution system, or fire protection, and thus should only pay a portion of the full system costs. Currently, hauled water customers are not charged for service. An analysis was done, based on the cost of service allocation, which determined the hauled water customers use approximately 25% of the total system assets. A rate is proposed at 25% of the metered water rate.

- A summary of rate structure options is shown in Exhibits 4-8 through 4-11 on pages 20-23.

2. Wastewater Utility

- Capital projects of $250,000 have been identified for the current year. The wastewater treatment plant is funded through tax revenue and plant upgrades are funded through rates. There is no additional capital budgeted for the remainder of the study period.
- Operating & maintenance costs are projected to increase from $368,000 to $538,000 by the end of the study period. Costs increase with inflation, ranging from 2.2% to 10.0% depending on the category of expense. Detail is shown in the technical appendix.
- Existing debt service payments are $29,000 per year through 2018.
- Revenue under existing rates is conservatively forecasted to remain constant throughout the study period, at around $96,000 per year.
- Revenue projections under existing rates are not adequate to meet the forecasted needs of the utility over the study period. Three scenarios were developed to meet cash obligations. Additional detail is shown in the technical appendix.
  - *Scenario 1: Baseline Analysis*
    This scenario maintains rates at existing levels and the sales/excise tax revenues ("General Fund transfer") covers the remaining revenue shortfall, totaling $3.9 million.

Exhibit ES-6: Scenario 1 - Wastewater Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807
General Fund Transfer	311,278	307,051	321,970	336,476	322,662	339,028	356,227	374,318	393,361	413,426	434,586
Non-Rate Revenues	4,791	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664
Total Revenues	**$ 415,876**	**$ 410,523**	**$ 425,442**	**$ 439,947**	**$ 426,133**	**$ 442,500**	**$ 459,699**	**$ 477,790**	**$ 496,833**	**$ 516,898**	**$ 538,058**
Expenses											
Cash Operating Expenses	$ 367,997	$ 381,523	$ 395,692	$ 410,547	$ 426,133	$ 442,500	$ 459,699	$ 477,790	$ 496,833	$ 516,898	$ 538,058
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	29,200	29,000	29,750	29,400	-	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	75,000	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 472,197**	**$ 410,523**	**$ 425,442**	**$ 439,947**	**$ 426,133**	**$ 442,500**	**$ 459,699**	**$ 477,790**	**$ 496,833**	**$ 516,898**	**$ 538,058**
Annual Surplus / (Deficiency)	**$ (56,321)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	-	-	-
Net Surplus / (Deficiency)	**$ (56,321)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Cumulative Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Rate Revenues After Rate Increase	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807
Full Year Rate Revenues After Rate Increase	99,807	99,807	99,807	99,807	99,807	99,807	99,807	99,807	99,807	99,807	99,807
Net Cash Flow After Rate Increase	(56,321)	-	-	-	-	-	-	-	-	-	-

- *Scenario 2: Combination of Tax Revenues Support and Utility Rate Increases*
  This scenario increases rates at 9.5% per year (to remain under double digits), with sales/excise tax revenues covering the remaining revenue shortfall. Tax support totals $3.2 million.

Exhibit ES-7: Scenario 2 - Wastewater Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807
General Fund Transfer	311,278	297,569	302,106	305,243	278,980	281,715	283,988	285,734	286,880	287,347	287,048
Non-Rate Revenues	4,791	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664	3,664
Total Revenues	**$ 415,876**	**$ 401,041**	**$ 405,578**	**$ 408,714**	**$ 382,452**	**$ 385,186**	**$ 387,459**	**$ 389,205**	**$ 390,352**	**$ 390,819**	**$ 390,520**
Expenses											
Cash Operating Expenses	$ 367,997	$ 381,523	$ 395,692	$ 410,547	$ 426,133	$ 442,500	$ 459,699	$ 477,790	$ 496,833	$ 516,898	$ 538,058
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	29,200	29,000	29,750	29,400	-	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	75,000	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 472,197**	**$ 410,523**	**$ 425,442**	**$ 439,947**	**$ 426,133**	**$ 442,500**	**$ 459,699**	**$ 477,790**	**$ 496,833**	**$ 516,898**	**$ 538,058**
Annual Surplus / (Deficiency)	**$ (56,321)**	**$ (9,482)**	**$ (19,864)**	**$ (31,233)**	**$ (43,682)**	**$ (57,313)**	**$ (72,240)**	**$ (88,584)**	**$ (106,482)**	**$ (126,079)**	**$ (147,538)**
Net Revenue from Rate Increases	-	9,482	19,864	31,233	43,682	57,313	72,240	88,584	106,482	126,079	147,538
Net Surplus / (Deficiency)	**$ (56,321)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**
Cumulative Annual Rate Adjustment	**0.00%**	**9.50%**	**19.90%**	**31.29%**	**43.77%**	**57.42%**	**72.38%**	**88.76%**	**106.69%**	**126.32%**	**147.82%**
Rate Revenues After Rate Increase	$ 99,807	$ 109,289	$ 119,672	$ 131,040	$ 143,489	$ 157,121	$ 172,047	$ 188,392	$ 206,289	$ 225,886	$ 247,346
Full Year Rate Revenues After Rate Increase	99,807	109,289	119,672	131,040	143,489	157,121	172,047	188,392	206,289	225,886	247,346
Net Cash Flow After Rate Increase	(56,321)	-	-	-	-	-	-	-	-	-	-

- *Scenario 3: Rate Increases Only*
  This scenario forecasts rate increases at over 300% in 2016, followed by annual increases of 4% per year. This does not appear to be a feasible rate strategy, given the level of rate increase needed in 2016. A more gradual phase-out approach would be more reasonable.

Exhibit ES-8: Scenario 3 - Wastewater Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807	$ 99,807
General Fund Transfer	311,278	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	4,791	3,664	3,664	3,664	3,664	3,941	3,941	3,941	3,941	3,941	3,941
Total Revenues	**$ 415,876**	**$ 103,472**	**$ 103,472**	**$ 103,472**	**$ 103,472**	**$ 103,748**	**$ 103,748**	**$ 103,748**	**$ 103,748**	**$ 103,748**	**$ 103,748**
Expenses											
Cash Operating Expenses	$ 367,997	$ 381,523	$ 395,692	$ 410,547	$ 426,133	$ 442,500	$ 459,699	$ 477,790	$ 496,833	$ 516,898	$ 538,058
Other Expenses	-	-	-	-	-	-	-	-	-	-	-
Existing Debt Service	29,200	29,000	29,750	29,400	-	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	75,000	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 472,197**	**$ 410,523**	**$ 425,442**	**$ 439,947**	**$ 426,133**	**$ 442,500**	**$ 459,699**	**$ 477,790**	**$ 496,833**	**$ 516,898**	**$ 538,058**
Annual Surplus / (Deficiency)	**$ (56,321)**	**$ (307,051)**	**$ (321,970)**	**$ (336,476)**	**$ (322,662)**	**$ (338,752)**	**$ (355,951)**	**$ (374,042)**	**$ (393,085)**	**$ (413,150)**	**$ (434,310)**
Net Revenue from Rate Increases	-	307,051	321,970	336,476	336,476	338,752	355,951	374,042	393,085	413,150	434,310
Net Surplus / (Deficiency)	**$ (56,321)**	**$ -**	**$ -**	**$ -**	**$ 13,814**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**307.64%**	**3.67%**	**3.44%**	**0.00%**	**0.52%**	**3.92%**	**3.97%**	**4.02%**	**4.07%**	**4.13%**
Cumulative Annual Rate Adjustment	**0.00%**	**307.64%**	**322.59%**	**337.12%**	**337.12%**	**339.41%**	**356.64%**	**374.76%**	**393.84%**	**413.95%**	**435.15%**
Rate Revenues After Rate Increase	$ 99,807	$ 406,858	$ 421,778	$ 436,283	$ 436,283	$ 438,559	$ 455,759	$ 473,849	$ 492,893	$ 512,958	$ 534,118
Full Year Rate Revenues After Rate Increase	99,807	406,858	421,778	436,283	436,283	438,559	455,759	473,849	492,893	512,958	534,118
Net Cash Flow After Rate Increase	(56,321)	-	-	-	13,814	-	-	-	-	-	-

- The operating account balance above the maximum target is used to supplement annual rate revenues and smooth rate increases over the study period. The balance ends at $73,000 (50 days of O&M expense) in each scenario. There is no capital account balance maintained during the study period.
- The cost of service analysis is performed for 2015 as a revenue neutral test year. Rate increases from the selected revenue requirement scenario would be applied to the calculated cost of service rates.
- The cost allocation process distributes utility-wide costs by functional components to the customer classes based on the relative demand placed on the wastewater system by each class. System assets were categorized as collection; treatment; and general plant. Asset categories, along with a detailed review of operating & maintenance costs, were assigned to functional components. Functional

components include: customer; flow; and strength. Customer costs are allocated in proportion to number of accounts; flow costs in proportion to estimated sewage contribution (based on estimated water use); and strength in proportion to weighted flow (assumed to be domestic level strength for all residential and commercial customers). Results are shown below:

Exhibit ES-9: Distribution of Wastewater System Costs to Customer Classes

Functional Categories:	Customer	Flow	BOD	TSS	Total
Allocation Basis:	*No. of Accounts*	*Contributed Flow*	*Wtd. Flow [a]*	*Wtd. Flow [a]*	
Residential Base	77.4%	55.7%	55.7%	55.7%	56.3%
Residential Surcharge	0.0%	3.0%	3.0%	3.0%	3.0%
Commercial Base	22.6%	34.8%	34.8%	34.8%	34.5%
Commercial Surcharge	0.0%	6.4%	6.4%	6.4%	6.3%
TOTAL	**100.0%**	**100.0%**	**100.0%**	**100.0%**	**100.0%**

[a] Total estimated flow weighted by strength

- Customer class categories include: residential base, residential surcharge, commercial base, and commercial surcharge customers. Septic hauling customers are evaluated separately.
- The cost of service analysis indicates that residential customers are paying more than their share of costs, while commercial customers are paying less than their share of costs.

Exhibit ES-10: Comparison of Wastewater Rate Revenue Distribution by Customer Class

	Cost of Service		
Customer Classes	Revenue under Existing Rates	FYE 2015 Cost of Service	Increase / (Decrease)
Residential Base	$ 56,902	$ 54,243	-4.7%
Residential Surcharge	4,289	2,850	-33.5%
Commercial Base	29,942	33,285	11.2%
Commercial Surcharge	5,279	6,034	14.3%
TOTAL	**$ 96,412**	**$ 96,412**	**0.0%**

- Similar to water, significant estimating techniques were used to derive sewer flows for unmetered customers. Flow was assumed to be equal to water use. While we believe our estimates produced reasonable results, true demand patterns cannot be ascertained without actual metered data for all customers. Additional details of the estimates can be found in Section 5 of the report.
- Septic dumping customers use the wastewater treatment functions, but not the wastewater collection function and thus should only be allocated a portion of the system costs. Staff provided the portion of applicable plant-in-service assets, and a cost of service allocation similar to residential and commercial customers was performed. The resulting allocated costs of $3,385 were

divided by the contributed flow of 3.9 million gallons to determine the resulting rate of $0.84 per 1,000 gallons. This represents a 1.77% decrease from the existing rate of $0.86 per 1,000 gallons.

- Potential wastewater rate adjustments were designed based on discussions with Municipality staff. Options were provided to: (1) maintain the existing structure and increase indicated utility-wide rate increases across-the-board to each existing rate component for all rates; or (2) maintain the existing structure and apply class-specific cost of service rate increases to each rate component for each customer class. New charges are incorporated into the proposed rate schedules for seasonal customers and septic customers (described above):
  - Similar to water, seasonal customers have utility service during the two summer quarters only, but infrastructure and staff are in place to serve them year round. Consistent with water, a charge of 10% of the full quarterly charge is proposed.
- A summary of rate structure options is shown in Exhibits 5-8 through 5-11 on pages 33-36.

3. Solid Waste Utility

- Capital projects of $200,000 have been identified for the current year, funded through tax revenue. There is no additional capital budgeted for the remainder of the study period.
- Operating & maintenance costs are projected to increase from about $696,000 to $991,000 by the end of the study period. Costs increase with inflation, ranging from 2.2% to 10.0% depending on the category of expense. Detail is shown in the technical appendix.
- Existing debt service payments for the incinerator loan are about $121,000 per year through 2019.
- Revenue under existing rates is conservatively forecasted to remain constant throughout the study period, at around $380,000 per year.
- Revenue projections under existing rates are not adequate to meet the forecasted needs of the utility over the study period. Three scenarios were developed to meet cash obligations. Additional detail is shown in the technical appendix.
  - *Scenario 1: Baseline Analysis*
    This scenario maintains rates at existing levels and the sales/excise tax revenues ("General Fund transfer") covers the remaining revenue shortfall, totaling $5.8 million over the study period.

Exhibit ES-11: Scenario 1 - Solid Waste Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543
General Fund Transfer	784,874	446,897	472,041	498,370	525,966	433,983	464,384	496,341	529,966	565,384	602,730
Non-Rate Revenues	30,017	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463
Total Revenues	**$ 1,193,434**	**$ 856,902**	**$ 882,046**	**$ 908,376**	**$ 935,972**	**$ 843,989**	**$ 874,390**	**$ 906,347**	**$ 939,972**	**$ 975,390**	**$ 1,012,735**
Expenses											
Cash Operating Expenses	$ 695,935	$ 719,489	$ 744,138	$ 769,958	$ 797,030	$ 825,440	$ 855,285	$ 886,669	$ 919,704	$ 954,514	$ 991,233
Other Expenses	16,000	16,480	16,974	17,484	18,008	18,548	19,105	19,678	20,268	20,876	21,503
Existing Debt Service	120,934	120,934	120,934	120,934	120,934	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 832,869**	**$ 856,902**	**$ 882,046**	**$ 908,376**	**$ 935,972**	**$ 843,989**	**$ 874,390**	**$ 906,347**	**$ 939,972**	**$ 975,390**	**$ 1,012,735**
Annual Surplus / (Deficiency)	**$ 360,565**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	-	-	-
Net Surplus / (Deficiency)	**$ 360,565**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Cumulative Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Rate Revenues After Rate Increase	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543
Net Cash Flow After Rate Increase	360,565	-	-	-	-	-	-	-	-	-	-

- *Scenario 2: Combination of Tax Revenues Support and Utility Rate Increases*
  This scenario increases rates at 9.5% per year (to remain under double digits), with sales/excise tax revenues covering the remaining revenue shortfall. Tax support totals $3.2 million.

Exhibit ES-12: Scenario 2 - Solid Waste Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543
General Fund Transfer	784,874	410,935	396,701	379,912	360,292	216,609	190,398	160,364	126,110	87,200	43,157
Non-Rate Revenues	30,017	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463	31,463
Total Revenues	**$ 1,193,434**	**$ 820,941**	**$ 806,707**	**$ 789,917**	**$ 770,298**	**$ 626,615**	**$ 600,404**	**$ 570,370**	**$ 536,116**	**$ 497,206**	**$ 453,163**
Expenses											
Cash Operating Expenses	$ 695,935	$ 719,489	$ 744,138	$ 769,958	$ 797,030	$ 825,440	$ 855,285	$ 886,669	$ 919,704	$ 954,514	$ 991,233
Other Expenses	16,000	16,480	16,974	17,484	18,008	18,548	19,105	19,678	20,268	20,876	21,503
Existing Debt Service	120,934	120,934	120,934	120,934	120,934	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 832,869**	**$ 856,902**	**$ 882,046**	**$ 908,376**	**$ 935,972**	**$ 843,989**	**$ 874,390**	**$ 906,347**	**$ 939,972**	**$ 975,390**	**$ 1,012,735**
Annual Surplus / (Deficiency)	**$ 360,565**	**$ (35,962)**	**$ (75,340)**	**$ (118,458)**	**$ (165,674)**	**$ (217,374)**	**$ (273,986)**	**$ (335,976)**	**$ (403,856)**	**$ (478,184)**	**$ (559,573)**
Net Revenue from Rate Increases	-	35,962	75,340	118,458	165,674	217,374	273,986	335,976	403,856	478,184	559,573
Net Surplus / (Deficiency)	**$ 360,565**	**$ -**	**$ -**	**$ (0)**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**	**$ -**
Annual Rate Adjustment	**0.00%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**	**9.50%**
Cumulative Annual Rate Adjustment	**0.00%**	**9.50%**	**19.90%**	**31.29%**	**43.77%**	**57.42%**	**72.38%**	**88.76%**	**106.69%**	**126.32%**	**147.82%**
Rate Revenues After Rate Increase	$ 378,543	$ 414,505	$ 453,883	$ 497,001	$ 544,217	$ 595,917	$ 652,529	$ 714,520	$ 782,399	$ 856,727	$ 938,116
Net Cash Flow After Rate Increase	360,565	-	-	-	-	-	-	-	-	-	-

- *Scenario 3: Rate Increases Only*
  This scenario forecasts rate increases at 122% in 2016, followed by inflationary increases in subsequent years. This does not appear to be a feasible rate strategy, given the level of rate increase needed in 2016. A more gradual phase-out approach would be more reasonable.

Exhibit ES-13: Scenario 3 - Solid Waste Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543	$ 378,543
General Fund Transfer	784,874	-	-	-	-	-	-	-	-	-	-
Non-Rate Revenues	30,017	31,463	31,734	31,852	31,916	31,982	32,047	32,126	32,203	32,285	32,364
Total Revenues	**$ 1,193,434**	**$ 410,006**	**$ 410,277**	**$ 410,395**	**$ 410,459**	**$ 410,525**	**$ 410,590**	**$ 410,669**	**$ 410,747**	**$ 410,828**	**$ 410,907**
Expenses											
Cash Operating Expenses	$ 695,935	$ 719,489	$ 744,138	$ 769,958	$ 797,030	$ 825,440	$ 855,285	$ 886,669	$ 919,704	$ 954,514	$ 991,233
Other Expenses	16,000	16,480	16,974	17,484	18,008	18,548	19,105	19,678	20,268	20,876	21,503
Existing Debt Service	120,934	120,934	120,934	120,934	120,934	-	-	-	-	-	-
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded Capital	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 832,869**	**$ 856,902**	**$ 882,046**	**$ 908,376**	**$ 935,972**	**$ 843,989**	**$ 874,390**	**$ 906,347**	**$ 939,972**	**$ 975,390**	**$ 1,012,735**
Annual Surplus / (Deficiency)	**$ 360,565**	**$ (446,897)**	**$ (471,770)**	**$ (497,981)**	**$ (525,513)**	**$ (433,463)**	**$ (463,800)**	**$ (495,677)**	**$ (529,225)**	**$ (564,562)**	**$ (601,828)**
Net Revenue from Rate Increases	-	460,434	484,813	510,372	537,193	537,193	537,193	537,193	537,193	568,735	605,271
Net Surplus / (Deficiency)	**$ 360,565**	**$ 13,537**	**$ 13,043**	**$ 12,391**	**$ 11,680**	**$ 103,729**	**$ 73,393**	**$ 41,515**	**$ 7,967**	**$ 4,173**	**$ 3,443**
Annual Rate Adjustment	**0.00%**	**121.63%**	**2.91%**	**2.96%**	**3.02%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**3.44%**	**3.86%**
Cumulative Annual Rate Adjustment	**0.00%**	**121.63%**	**128.07%**	**134.83%**	**141.91%**	**141.91%**	**141.91%**	**141.91%**	**141.91%**	**150.24%**	**159.89%**
Rate Revenues After Rate Increase	$ 378,543	$ 838,977	$ 863,356	$ 888,915	$ 915,736	$ 915,736	$ 915,736	$ 915,736	$ 915,736	$ 947,278	$ 983,814
Net Cash Flow After Rate Increase	360,565	13,537	13,043	12,391	11,680	103,729	73,393	41,515	7,967	4,173	3,443

- The operating account balance above the maximum target is used to supplement annual rate revenues and smooth rate increases over the study period. The balance ends at $72,000 (27 days of O&M expense) in scenarios 1 & 2, and about $110,000 (40 days of O&M expense) in scenario 3. There is no capital account balance maintained during the study period. However, in scenario 3, additional funds generated during the study period were transferred to the capital account.
- The cost of service analysis is performed for 2015 as a revenue neutral test year. Rate increases from the selected revenue requirement scenario would be applied to the calculated cost of service rates.

- The cost allocation process distributes utility-wide costs by functional components to the customer classes based on the relative demand placed on the solid waste system by each class. System assets were categorized as collection; disposal; recycling; and general plant. Asset categories, along with a detailed review of operating & maintenance costs, were assigned to functional components. Functional components include: customer; collection; disposal; and recycling. Customer costs are allocated in proportion to number of accounts; collection costs based on a combination factor of 75% by number of pickups and 25% by total volume; disposal costs in proportion to total volume; and recycling in proportion to recycling volume. Salaries and benefits costs for disposal and recycling were allocated separately, based on a weighted processing time factor developed with Municipality staff.
- Potential solid waste rate adjustments were designed based on discussions with Municipality staff. Options were provided to: (1) maintain the existing structure and increase indicated utility-wide rate increases across-the-board to each existing rate component for all rates; or (2) maintain the existing structure and apply class-specific cost of service rate increases to each rate component for each customer class. New charges are incorporated into the proposed rate schedules for seasonal customers, fryer oil, and cardboard:
  - Similar to water and sewer, seasonal customers have utility service during the two summer quarters only, but infrastructure and staff are in place to serve them year round. Consistent with water and sewer, a charge of 10% of the full quarterly charge is proposed.
  - Fryer oil disposal and cardboard recycling are not currently charged. Volume and man hours for processing fryer oil and cardboard were provided by Municipality staff. Rate schedules were developed that both do and do not incorporate these charges, based on Assembly approval.
- A summary of rate structure proposed charges is shown in Exhibit 6-6 on page 43. An expanded schedule of residential and commercial can collection is shown for additional clarity and transparency.

4. Harbor Utility

- Capital projects of $26.5 million (escalated) have been identified for the study period. The current year's projects of $1.9 million are assumed to be funded with $1.6 million in tax revenue, and the remainder with utility cash resources. Future projects are all assumed to be grant funded.
- Operating & maintenance costs are projected to increase from $270,000 to $360,000 by the end of the study period. Costs increase with inflation, ranging from 2.2% to 10.0% depending on the category of expense. Additional expensed capital is projected to increase from $35,000 to $44,000. Detail is shown in the technical appendix.
- Existing debt service payments average about $70,000 per year through 2033.
- Revenue under the existing level of fees is forecasted to remain constant throughout the study period, at around $300,000 per year.
- Revenue projections under existing rates are not adequate to meet the forecasted needs of the utility over the study period. Three scenarios were developed to meet cash obligations. Additional detail is shown in the technical appendix.
  - *Scenario 1: Baseline Analysis*
    This scenario maintains rates at existing levels and the sales/excise tax revenues ("General Fund transfer") covers the remaining shortfall, totaling $457,000 over the study period.

Exhibit ES-14: Scenario 1 - Harbor Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494
Non-Rate Revenues	77,229	17,525	16,169	14,517	12,665	10,603	8,320	5,708	42,999	173,946	184,214
Total Revenues	**$ 372,723**	**$ 313,019**	**$ 311,663**	**$ 310,011**	**$ 308,159**	**$ 306,097**	**$ 303,814**	**$ 301,202**	**$ 338,493**	**$ 469,440**	**$ 479,708**
Expenses											
Cash Operating Expenses	$ 270,173	$ 277,836	$ 285,785	$ 294,037	$ 302,608	$ 311,518	$ 320,788	$ 330,440	$ 340,498	$ 350,989	$ 361,942
Other Expenses	35,000	36,050	37,132	38,245	39,393	40,575	41,792	43,046	44,337	45,667	47,037
Existing Debt Service	67,550	66,950	71,350	70,300	69,250	68,200	71,800	70,200	68,600	72,000	69,750
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded CIP	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 372,723**	**$ 380,836**	**$ 394,267**	**$ 402,582**	**$ 411,251**	**$ 420,292**	**$ 434,379**	**$ 443,685**	**$ 453,435**	**$ 468,656**	**$ 478,729**
Annual Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (114,942)**	**$ 783**	**$ 979**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	-	-	-
Net Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (114,942)**	**$ 783**	**$ 979**
Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Cumulative Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**
Rate Revenues After Rate Increase	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494
Full Year Rate Revenues After Rate Increase	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494
Net Cash Flow After Rate Increase	-	(67,817)	(82,604)	(92,571)	(103,091)	(114,195)	(130,566)	(142,483)	(114,942)	783	979

- *Scenario 2: Combination of Tax Revenues Support and Utility Rate Increases*
  This scenario increases rates at 9.5% per year in years FY 2023 – FY 2025, with sales/excise tax revenues covering the remaining revenue shortfall. Tax support totals $218,000.

Exhibit ES-15: Scenario 2 - Harbor Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494
Non-Rate Revenues	77,229	17,525	16,169	14,517	12,665	10,603	8,320	5,708	14,927	115,135	91,744
Total Revenues	**$ 372,723**	**$ 313,019**	**$ 311,663**	**$ 310,011**	**$ 308,159**	**$ 306,097**	**$ 303,814**	**$ 301,202**	**$ 310,421**	**$ 410,629**	**$ 387,238**
Expenses											
Cash Operating Expenses	$ 270,173	$ 277,836	$ 285,785	$ 294,037	$ 302,608	$ 311,518	$ 320,788	$ 330,440	$ 340,498	$ 350,989	$ 361,942
Other Expenses	35,000	36,050	37,132	38,245	39,393	40,575	41,792	43,046	44,337	45,667	47,037
Existing Debt Service	67,550	66,950	71,350	70,300	69,250	68,200	71,800	70,200	68,600	72,000	69,750
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded CIP	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 372,723**	**$ 380,836**	**$ 394,267**	**$ 402,582**	**$ 411,251**	**$ 420,292**	**$ 434,379**	**$ 443,685**	**$ 453,435**	**$ 468,656**	**$ 478,729**
Annual Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (143,014)**	**$ (58,027)**	**$ (91,491)**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	28,072	58,811	92,470
Net Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (114,942)**	**$ 783**	**$ 979**
Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**9.50%**	**9.50%**	**9.50%**
Cumulative Annual Rate Adjustment	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**0.00%**	**9.50%**	**19.90%**	**31.29%**
Rate Revenues After Rate Increase	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 323,566	$ 354,305	$ 387,964
Full Year Rate Revenues After Rate Increase	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494	323,566	354,305	387,964
Net Cash Flow After Rate Increase	-	(67,817)	(82,604)	(92,571)	(103,091)	(114,195)	(130,566)	(142,483)	(114,942)	783	979

- *Scenario 3: Rate Increases Only*
  This scenario forecasts rate increases in FY 2023 – FY 2025 at 23%, 23%, and about 6%, respectively, for a cumulative increase of about 60% over the study period.

Exhibit ES-16: Scenario 3 - Harbor Revenue Requirements

Revenue Requirements - FYE	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Revenues											
Rate Revenues Under Existing Rates	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494
Non-Rate Revenues	77,229	17,525	16,169	14,517	12,665	10,603	8,320	5,708	2,859	1,116	706
Total Revenues	**$ 372,723**	**$ 313,019**	**$ 311,663**	**$ 310,011**	**$ 308,159**	**$ 306,097**	**$ 303,814**	**$ 301,202**	**$ 298,353**	**$ 296,610**	**$ 296,200**
Expenses											
Cash Operating Expenses	$ 270,173	$ 277,836	$ 285,785	$ 294,037	$ 302,608	$ 311,518	$ 320,788	$ 330,440	$ 340,498	$ 350,989	$ 361,942
Other Expenses	35,000	36,050	37,132	38,245	39,393	40,575	41,792	43,046	44,337	45,667	47,037
Existing Debt Service	67,550	66,950	71,350	70,300	69,250	68,200	71,800	70,200	68,600	72,000	69,750
New Debt Service	-	-	-	-	-	-	-	-	-	-	-
Direct Rate-Funded CIP	-	-	-	-	-	-	-	-	-	-	-
Rate Funded System Reinvestment	-	-	-	-	-	-	-	-	-	-	-
Total Expenses	**$ 372,723**	**$ 380,836**	**$ 394,267**	**$ 402,582**	**$ 411,251**	**$ 420,292**	**$ 434,379**	**$ 443,685**	**$ 453,435**	**$ 468,656**	**$ 478,729**
Annual Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (155,082)**	**$ (172,046)**	**$ (182,528)**
Net Revenue from Rate Increases	-	-	-	-	-	-	-	-	67,964	151,559	177,642
Net Surplus / (Deficiency)	**$ -**	**$ (67,817)**	**$ (82,604)**	**$ (92,571)**	**$ (103,091)**	**$ (114,195)**	**$ (130,566)**	**$ (142,483)**	**$ (87,119)**	**$ (20,487)**	**$ (4,887)**
Annual Rate Adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	23.00%	5.83%
Cumulative Annual Rate Adjustment	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.00%	51.29%	60.12%
Rate Revenues After Rate Increase	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 295,494	$ 363,458	$ 447,053	$ 473,136
Full Year Rate Revenues After Rate Increase	295,494	295,494	295,494	295,494	295,494	295,494	295,494	295,494	363,458	447,053	473,136
Net Cash Flow After Rate Increase	-	(67,817)	(82,604)	(92,571)	(103,091)	(114,195)	(130,566)	(142,483)	(87,119)	(20,487)	(4,887)

- The operating account balance above the maximum target is used to supplement annual rate revenues and smooth rate increases over the study period. The balance ends at $30,000 (30 days of O&M expense) in each scenario. There is no capital account balance maintained during the study period.
- The cost of service analysis is performed for 2015 as a revenue neutral test year. Rate increases from the selected revenue requirement scenario would be applied to the calculated cost of service rates.
- The cost allocation process distributes utility-wide costs to functional categories that represent facilities, services, costs, or general functions. These functional categories are: administration; operating equipment; general facility maintenance; seawalk groundskeeping; restroom cleaning; electricity; boat maintenance facility; and wait list. Time estimates for each of these categories were developed based on conversations with Municipality staff. Non-labor cost allocation is detailed further in the report. Results are shown below:

Exhibit ES-17: Functional Allocation of Harbor System Costs

Functional Category	Cost
Administration	$123,455
Operating Equipment	18,831
General Facility Maintenance	125,045
Ferry Float & Barge	7,504
Seawalk Groundskeeping	10,419
Restroom Cleaning	8,525
Electricity	12,000
Boat Maintenance Facility	6,000
Wait List	64
Total	$311,844

- Fee categories include: ferry float & barge; boat launch; annual moorage; transient moorage; storage; boat maintenance facility; tidal grid; and haul out. Costs were assigned to fee categories based on time estimates and use of functional category services.

- The cost of service analysis indicates that total revenues cover the operating and maintenance costs, with annual moorage, storage area, and wait list revenues recovering more. All other fee categories are recovering less than their indicated cost of service. Results are shown below:

Exhibit ES-18: Comparison of Harbor Fee Revenue Distribution by Service

Fee Category	O&M Cost	Revenues	Revenue Difference	% Cost Recovery	Ave % Fee Increase
Ferry Float & Barge	$21,547	$10,236	($11,311)	48%	111%
Boat Launch	$28,668	$4,146	($24,522)	14%	591%
Annual Moorage	$53,513	$89,405	$35,892	167%	(40%)
Transient Moorage	$112,408	$91,218	($21,190)	81%	23%
Wait List	$64	$690	$626	984%	(91%)
Tidal Grid	$14,042	$45	($13,997)	0.3%	31105%
Storage Area	$28,685	$83,190	$54,505	190%	(66%)
Boat Maintenance Facility	$34,085	$20,250	($13,835)	59%	68%
Haul Out	$18,831	$12,850	($5,981)	68%	47%
Total	**$311,844**	**$312,030**	**$186**	**100%**	-

- Potential harbor fee adjustments were designed based on discussions with Municipality staff. In all cases, no changes were recommended to the current fee structure. Options were provided to: (1) adjust all fees based on the cost of service; (2) apply an across-the-board increase to all fees and maintain current subsidies; or (3) selectively raise major fees and/or reduce high cost recovery fees to lower the subsidy.
- A summary of rate structure options is shown in Exhibit 7-10 on Page 55.

D. SUMMARY

Projections are by nature conjectural and rely on many assumptions regarding growth, actual expenditures, customer usage patterns and corresponding revenue collections, and no guarantee as to their ultimate accuracy can be made. We have endeavored to apply the best available estimates of future conditions that affect these findings. However, regular review of actual utility financial performance should be an integral part of the successful implementation of this study. Rates should be updated as needed to reflect current conditions.

The report provides separate sections for Study Framework (Section 1); Financial Policies (Section 2); Methodology (Section 3); Water Utility Results (Section 4); Wastewater Utility Results (Section 5); Solid Waste Utility Results (Section 6); and Harbor Utility Results (Section 7). The technical spreadsheet analyses are provided as appendices to the report.

We greatly appreciate the efforts and support of Municipality staff throughout the study process. It has been a pleasure working with you and we look forward to assisting you with your future financial / management needs. Any questions or commentary regarding this report can be directed to me at 425-867-1802, ext. 241, or karynj@fcsgroup.com.

Yours very truly,

Karyn Johnson
Principal

Krista Shirley
Project Consultant