

City of Edmonton
Waste Services Utility
2019 Utility Rate Filing

October 12, 2018



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Executive Summary

Waste Services continues to strive towards achieving the financial indicators as set out in Waste Management Utility Fiscal Policy C558A, adopted by City Council in 2014, which is reflective of the foundational vision, principles and goals captured in the City Council's Strategic Plan 2019-2028. Over the next four year budget cycle (2019 - 2022), Waste Services expects to maintain a stable, consistent rate increase environment. This will be achieved through increases in operational efficiencies and prioritization of capital projects. The resulting rate impacts reflect services and infrastructure required to support the Branch initiatives.

In 2019, Waste Services will start implementing program changes that will better align the City with the goal of diverting 90 percent of residential waste from landfill. Some of these program changes include, but are not limited to, the Source Separated Organics Pilot, changes to curbside collection of grass, leaf and yard waste to improve compost quality, and the establishment of an asset management strategy to provide infrastructure maintenance funding guidelines. Additionally, Waste Services will focus on engagement with citizens, establishing effective working relationships with the private sector and exploring opportunities to recover, reduce and reuse materials from the waste stream. Waste Services is confident that through education, partnerships and expanded opportunities for environmental stewardship, the City of Edmonton will continue to be at the forefront of sustainable waste management and value recovery. These program changes ensure fiscal accountability with stable rate increases, continuous business improvements and renewed focus on safety for both employees and customers.

Waste Services has placed a high priority on achieving low, stable and consistent rate increases as it moves toward financial sustainability. The target will be achieved with a proposed 2.5 percent increase in each year, 2019 through 2022, before declining gradually to 1.5 percent in 2026 and beyond. Other financial indicators, as defined in the Waste Management Utility Fiscal Policy C558A, are trending positively as well. Specifically, Waste Services will meet the requirement of generating sufficient net income to cover operating expenses, the debt to net asset ratio decreases from projected 79.4 percent in 2018 to 73.7 percent by 2022, the target cash balance is met in each year to support the Waste Services capital spending plan and FTE counts will remain at 2018 levels through operating efficiencies and continuous improvements efforts.

Excess of revenues over expenses and rate increases are required on a go-forward basis to manage the Waste Services' long-term financial sustainability, ensure sufficient funding for operations and provide funding for capital initiatives, such as the rehabilitation or replacement of the composting facility and the roll-out of strategic program changes such as source separated organics. To provide reduced rate increases as reflected in this rate file, Waste Services has focused on operational efficiencies and managing within existing staff complements. The capital budget was also fully reviewed through a capital project prioritization effort. Pay-as-you-go funding, defined as cash for capital financing, was used to fund capital expenditures where feasible to reduce borrowing and improve the debt to net asset target.

Significant factors affecting Waste Services' programs over the next four years include:

- Increased customer base due to growth of single unit and multi-unit residential areas.
- Volatility of the markets for recycled commodities processed by the Materials Recovery Facility.
- Formal final closure of the Clover Bar Landfill, including the reduction of leachate levels and improvements in existing leachate containment systems.
- Commissioning of new technology such as the Anaerobic Digestion Facility and the Refuse Derived Fuel Dryer to support waste diversion.

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- Introduction of proposed strategic program changes focused on household separation of organic waste and changes to curbside collection of grass, leaf and yard waste.
- Continued review and evaluation of the capital requirements to ensure that the capital program is prioritized and optimized in an effort to improve Waste Services' debt-to-net asset position.
- Development of an asset management strategy to ensure infrastructure rehabilitation is prioritized, pursued proactively and funded appropriately.
- Updated cost allocation methodology between customer classes, based on a third party conducted Cost of Service Study.

As part of the 2018 Utility Rate Filing, Waste Services applied for and received approval to establish a regulatory deferral account to capture known and anticipated financial losses related to the structural failure of the Edmonton Composting Facility (ECF). In its 2019 rate filing, Waste Services has established a regulatory asset to allow for collection of the incurred ECF expenses from ratepayers over the next 12 years to prevent rate shock and to maintain stable, consistent rate increases. The amortization expense attributed to the regulatory asset has been included in the revenue requirement for 2019 and subsequent years.

1.0 Introduction

City of Edmonton Waste Services is committed to fostering a healthy environment, improving fiscal responsibility and reducing the amount of materials that end up in landfill. To achieve these goals, the City delivers a wide range of programs and services to the public, including the delivery of solid waste collections and processing services, through the municipality-owned public utility - Waste Services. Waste Services plays an integral part in the day-to-day lives of City of Edmonton residents and helps promote City Council's overall vision and long-term strategic objectives.

The City's integrated waste management system closely aligns with the City Council's Strategic Plan 2019 - 2028: Healthy City, Urban Places, Regional Prosperity, and Climate Resilience. Waste Services is focused on sustainable waste solutions with innovative systems that divert waste from landfill and treat waste as a resource. Waste Services provides collection and sustainable waste processing services to residential (regulated) customers and provides optional waste collection and sustainable waste processing services for non-residential (non-regulated) customers. Regulated services are funded by utility rates while non-regulated services are funded by program revenues and are to be delivered on a profit basis. Waste Services is governed by the Waste Management Utility Fiscal Policy – C558A, which focuses on the financial sustainability of the utility. The policy reflects City Council's directions on the financial objectives and management for Waste Services. The purpose of the policy is to ensure Waste Services is operated in a manner that reflects City Council's overall vision and philosophical objectives, while maintaining a consistent approach for financial planning, budgeting and rate setting to ensure long term financial sustainability.

Over the next four year budget cycle, Waste Services will deliver programs and services that will help move Edmonton toward City Council's goal of 90 percent residential waste diversion from landfill; identify opportunities for the recovery of valuable waste resources; partner with stakeholders to encourage the development and commercialization of new technologies; engage citizens to define issues; consider solutions and identify priorities; and implement the necessary program and service changes to secure a sustainable future for Edmonton. Programs will also ensure fiscal accountability with stable rate increases, continuous business improvements and a renewed focus on safety, employees and customers. These efforts will result in significant changes to the waste management program, such as changes to the residential curbside collection of grass, leaf and yard waste and the implementation of a source separated organics program. Through the development of a performance management framework, Waste Services is examining and optimizing all areas of business to maximize efficiencies, increase value for money, minimize risk and maintain the highest standards of safety for employees.

2.0 Organizational Structure

Waste Services fulfills its mandate to foster a healthy environment, improving fiscal responsibility and reduce the amount of materials that end up in landfill through the following organizational structure:



Waste Collection Services

Waste Collection Services responds to the current and changing needs of customers through the following programs:

- Collection of residential waste and recyclables from approximately 392,000 single unit and multi-unit households;
- Assisted Waste Collection for approximately 300 residents with mobility restrictions; and
- Collection of non-residential waste and recyclables from commercial businesses and institutions, including construction and demolition waste.

In addition to direct collection, residents also have access to a number of facilities around the City where larger items, which cannot be collected curbside, can be dropped off for recycling, reuse or disposal. These include:

- Four Eco Stations for disposal of household hazardous waste and other material;
- 23 Community Recycling Depots accessible 24/7 offering drop-off locations for residents and small businesses;
- Big Bin Events for households to dispose of large or bulky items not suitable for regular waste collection; and
- The Reuse Centre for collection of small items that are reused by individuals and community groups.

Sustainable Waste Processing

The Edmonton Waste Management Centre is a unique collection of advanced waste processing and research facilities that turn waste into reusable and marketable materials. Sustainable Waste Processing focuses on receiving and sorting residential and non-residential waste streams to recover valuable resources and minimize the amount of waste going to landfill.

The Edmonton Waste Management Centre is an integrated site designed to process more than 500,000 tonnes of waste per year. This waste is processed through a combination of 14 waste processing facilities aligned to recover maximum value from waste products and transform waste into valuable resources. To increase residential diversion from landfill, the Edmonton Waste Management Centre is implementing waste processing technologies (e.g. Anaerobic Digestion Facility) in order to recover more from the organics stream.

Technical Services

Technical Services is dedicated to the engineering, technical support and environmental compliance of waste processing and collection operations. Technical Services also manages and provides oversight of the Waste Services capital projects and large operational investment programs to ensure effective, compliant and efficient waste operations.

Business Integration

Business Integration is responsible for defining Waste Services strategy, facilitating operational direction, resource allocation, financial governance and Branch-wide alignment to corporate directives. Key areas of focus in Business Integration include performance management, monitoring and reporting, contract management, workforce development and resource allocation, financial sustainability, communications and education programs, and safety training.

3.0 Methodology and Key Assumptions

The following subsections provide the methodology and key assumptions for the Waste Services Utility.

The 2019 Rate Filing is based on the June 30, 2018 Forecast incorporating significant changes up to August 31, 2018. The assumptions used to develop this Rate File include City Council approved corporate budget guidelines and forecasts from the City Economist:

- **Housing Starts and Consumer Price Index:**

	2019 Budget	2020 Proposed	2021 Proposed	2022 Proposed
Housing Starts	8,844	9,017	9,206	9,401
Consumer Price Index	1.6%	2.0%	1.9%	1.9%

- **Employee Benefits** - The 2019 – 2022 Operating Budget numbers were calculated by the City of Edmonton Capital and Operating Budget System (COBS) which allocates benefit dollars by employee. The 2019 Rate File includes an update for any recent benefit rate increases for the Local Authorities Pension Plan, Canada Pension Plan, Employment Insurance, Major Medical and Dental Plan, Group Life Insurance and Health Care Spending Account.

- **Cost of Debt:**

Term	2019	2020	2021	2022
10 Year	3.10%	3.35%	3.60%	3.85%
15 Year	3.35%	3.60%	3.85%	4.10%
20 Year	3.47%	3.72%	3.97%	4.22%
25 Year	3.55%	3.80%	4.05%	4.30%

Debt servicing calculations use cost of debt rate forecast provided by the City’s Corporate Budget Office and are based on actual Alberta Capital Finance Authority borrowing rates up to the first quarter of 2018. The rates are mid-year estimates. An additional 0.25 percent increment is added per year starting in 2019.

Other Assumptions used include the following:

- Waste Services Utility Staff Vacancy – unless otherwise stated, the typical expected staff vacancy is 5 percent for all staff.
- Full-Time Equivalent – a full time equivalent (FTE) is defined as the hours (and associated personnel costs) one full-time employee would work in a year. For example, if a position is funded for one year, it is equivalent to 1.0 FTE, whereas a position funded for six months, is equivalent to 0.5 of an FTE. Funding for a

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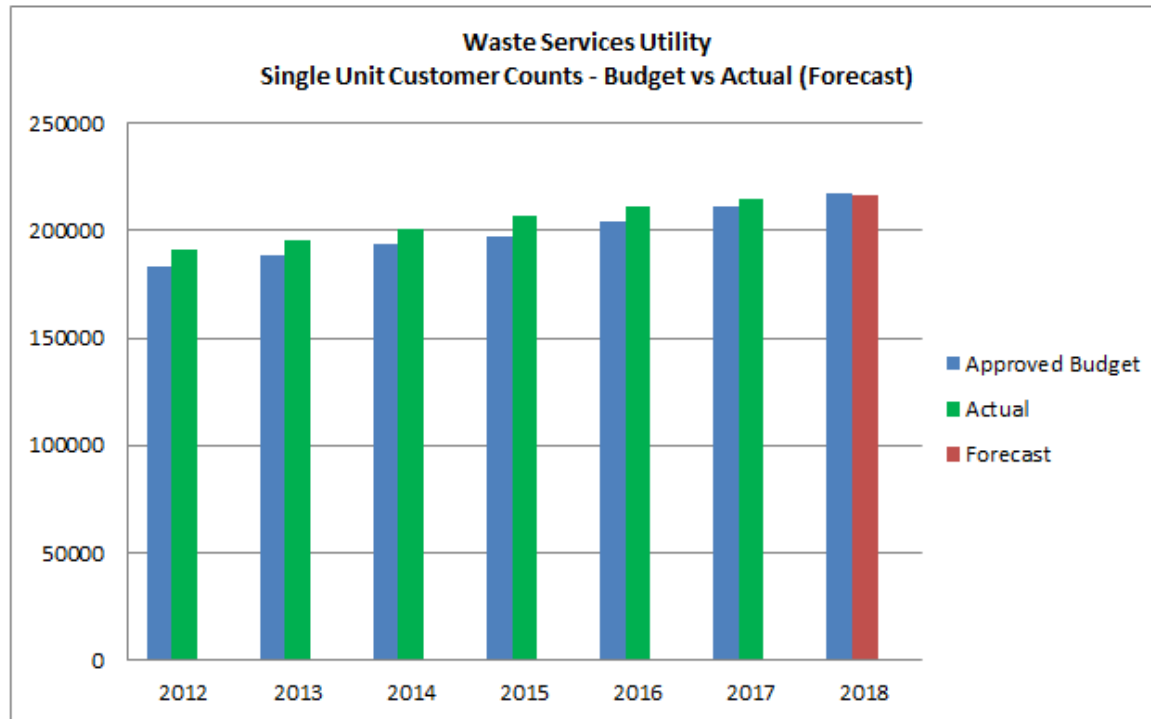
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new position may be adjusted in the first year to reflect the timing between approval of a new position and hiring, with full funding for the position beginning the following year.

- Growth – Beginning with the 2018 Rate Filing, Waste Services changed its approach to the estimation of the proposed and forecast single unit and multi-unit customer counts. The customer counts are now based on historical trends and the anticipated household starts as projected by the City’s Chief Economist¹. The proposed customer billing base is represented in the figures below:

	2017 Actual	2018 Forecast	2019 Proposed	2020 Forecast*	2021 Forecast	2022 Forecast
Single Unit	214,900	216,495	219,141	235,339	238,093	240,905
Multi-Unit	174,196	175,489	177,634	166,321	168,553	170,833

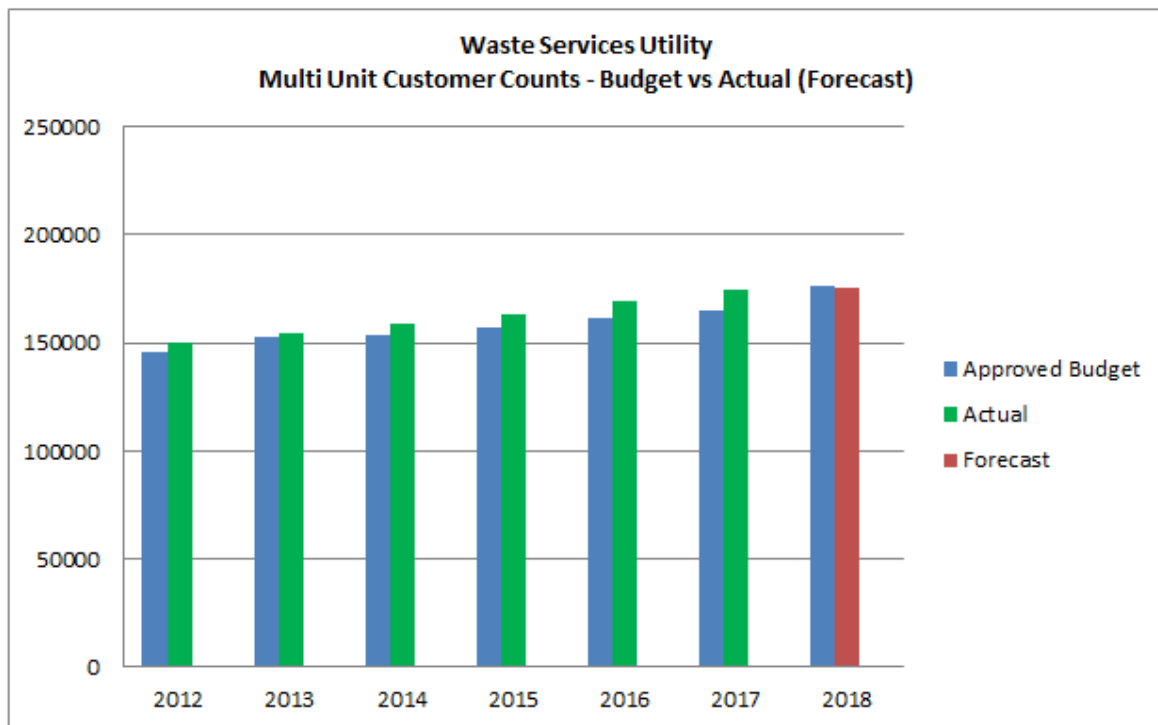
* Includes the reclassification of 13,500 customers from Multi-Unit to Single Unit, see detailed discussion below.



¹ Rate revenues year to date in 2018 are trending slightly below budget suggesting that the revised methodology has corrected the prior underestimation of growth.

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As part of the Cost of Service Study (COSS) a review of customer accounts occurred. Through this review up to 27,000² households (townhouses, duplexes, etc) were identified as receiving service as if they were a single unit customer but were being charged the multi-unit rate. In 2019, Waste Services will undertake a detailed analysis of these accounts to determine the appropriate classification. The analysis will categorize each dwelling type, document the service provided, and review the related policies and procedures (some of which may require amendment). This rate filing anticipates the reclassification of 50 percent of these households (13,500 units) from the multi-unit rate to the single unit rate beginning in 2020. To avoid rate shock for these customers, Waste Services intends to adjust the rates from the multi-unit rate to the single unit rate over a period of five years.

² While the unit count was 24,895 in the 2017 COSS, as many as 27,000 units are expected by 2020.

4.0 Operational Performance

The four performance goals below summarize Waste Services’ performance measures and align with the 2019-2022 Business Plan.

GOAL	PERFORMANCE MEASURE	ACTUALS	FORECAST	TARGETS			
		2017	2018	2019	2020	2021	2022
Customer Excellence	Overall Satisfaction with Eco Stations	94%	94%	94%	94%	94%	94%
	Overall Satisfaction with Residential Collection Service	90%	90.5%	90.5%	91%	91%	91%
	Number of Missed Collections per 10,000	2	2	2	2	2	2
Operational Excellence	Single Unit Residential Diversion Rate ³	39%	41%	50%	64%	66%	80%
	Kilograms of Waste Collected per Capita	262	260	260	255	250	240
	Kilograms of Recycling Collected per Capita	44	48	49	51	52	53
	Number Reportable Environmental Incidents	49	40	38	36	34	32

³ The Single Unit Residential Diversion Rate calculation has been updated according to the methodology presented in Council Report CR_5824. The forecast and targets have been set based on the assumed implementation of waste reduction and diversion activities as outlined in Council Report CR_5184.

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GOAL	PERFORMANCE MEASURE	ACTUALS	FORECAST	TARGETS			
		2017	2018	2019	2020	2021	2022
Financial Accountability	Stable Rates	4.4%	2.3%	2.5%	2.5%	2.5%	2.5%
	Debt to Net Assets Ratio	86.3%	79.4%	75.4%	73.6%	73.3%	73.7%
	Cash Position (\$000s)	50,860	61,383	53,471	39,560	23,023	21,646
Organizational Excellence	Engagement Survey Employee Response Rate	N/A	75%	N/A	78%	N/A	80%
	Percentage Turnover per 100 FTEs	4.8%	5.5%	5.5%	5.5%	5.5%	5.5%
	Lost Time Injury Frequency Rate	5.68	5.19	4.93	4.68	4.45	4.22

5.0 Cost of Service Study

In May 2018, Waste Services retained the consulting firm Grant Thornton LLP (GT) to perform a Cost of Service Study (COSS) using the Utility's 2017 operational and financial results to determine if costs had been properly allocated to the appropriate customer classes. The purpose of this study was to:

- Perform cost allocation analysis: this required allocating costs to Programs (i.e. Collections vs. Processing and Disposal), Functions (i.e. detailed work activities performed by Waste Services), and Customer Class (i.e. Single Unit, Multi-Unit, and Non-Residential) using agreed upon allocation methodologies. To accurately allocate costs to customer class, an up-to-date understanding of Waste Service's Regulated and Non-Regulated activities was required. GT worked in collaboration with Waste Services and Financial Services staff to achieve this understanding.
- Perform cost recovery analysis: this required comparing the revenues received for each customer class to their allocated costs and determining the implications of the cost recovery results. This allowed GT to identify potential opportunities for improvement.
- Inform the Utility rate setting model: customer rates are informed by the results of the cost of service study.

To meet these objectives, GT followed a standard cost of service methodology which utilized a 4-step process, as highlighted below:

1. Determine total revenue requirements;
2. Functionalize capital costs (i.e. depreciation and debt interest) and operating costs / revenues;
3. Confirm customer classes and cost allocation drivers and assumptions; and,
4. Allocate functionalized costs to customer classes and perform cost recovery analysis.

5.1 COSS Revenue Requirements

Based on review of Waste Services' 2017 financial results, GT made minor adjustments in order to determine the cost of service for a 'normal' or 'test year'. Adjustments included the removal of one-time Greenhouse Gas Revenue attributable to 2015 and 2016 in the amount of \$1,805,000, and the addition of \$5,291,551 of "Post Closure" costs to account for the annual required contribution towards the Post Closure Liability. These adjustments were determined in conjunction with representatives from Financial Services.

The 2017 test year's total revenue requirements were calculated to be \$202,426,161, as summarized in the table below. Section 2.1 of the Fiscal Policy states that; "The target combined Cash Position of the Utility is the Pay as You Go required as identified in the Capital Plan plus an amount derived to mitigate the risk exposures". Based on this policy, the 2017 total revenue requirement calculated includes cash reserve amounts totalling \$8,129,000, which includes funds from Pay As you Go (PAYG) of \$5,954,000 and Risk Allowance of \$2,175,000.

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In the 2017 test year, Waste Services collected \$6,430,490 in excess of the total costs.

Item	2017 Amount (\$'s)
Single Unit & Multi-Unit Residential Rate Revenues	\$ 175,262,446
Operating Expenses:	
Operating and Maintenance Expenses (net of recoveries)	\$ 146,568,394
Overhead Expenses	\$ 17,580,563
Depreciation Expense	\$ 20,778,412
Debt Interest Expense	\$ 9,369,793
2017 REVENUE REQUIREMENT - BEFORE CASH RESERVE AMOUNTS	\$ 194,297,161
Cash Reserve Amounts:	
Pay-As-You-Go	\$ 5,954,000
Risk Allowance	\$ 2,175,000
2017 TOTAL REVENUE REQUIREMENT	\$ 202,426,161
Net Gain (Loss) Before Non-Rate Revenues	\$ (27,163,716)
Non-Rate Revenues	\$ 33,594,206
Net Gain (Loss) After Non-Rate Revenues	<u>\$ 6,430,490</u>

Note: In the absence of the Post Closure normalization adjustment (i.e. if the entire expense of \$10,880,810 was included) the resulting Net Gain (Loss) After Non-Rate Revenues would be \$841,231.

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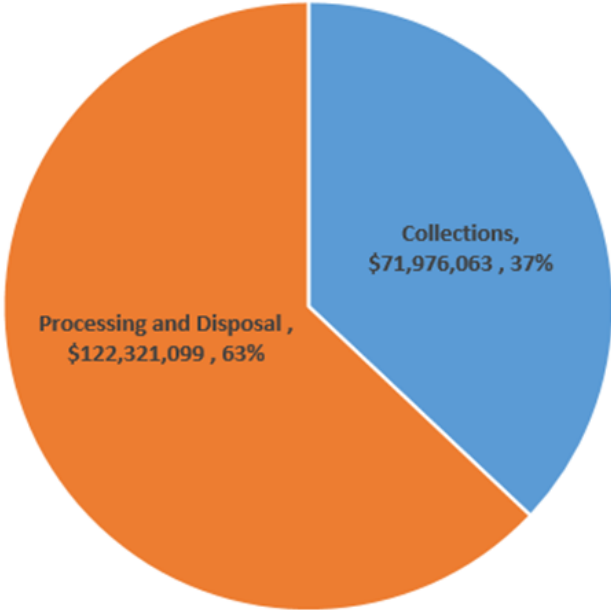
5.2 COSS Cost Allocations

Waste Services' total cost by Program is illustrated in the chart below. Processing and Disposal represents the majority of Waste Services' costs at 63%, while Collections makes up the remaining 37%.

2017 Total Costs by Service Program

Collections	\$ 71,976,063
Processing and Disposal	<u>\$ 122,321,099</u>
	\$ 194,297,161

2017 Total Cost of Service by Program



5.3 COSS Results

The following are the key findings from the 2017 COSS:

- Overall, Waste Services recovered approximately \$6.4M⁴ in excess of its costs;
- The combined cost recovery for the Regulated portion of Waste Services’ business that provides service to Residential customers is 105.2%;
 - Single Unit cost recovery is 103.4%;
 - Multi-Unit cost recovery is 109.6%;
- In contrast, the cost recovery for the Non-Regulated portion of Waste Services’ business that provides service to Non-Residential customers is 87.0%.

	Total Revenues	Total Revenue Requirement	Difference	Cost Recovery Ratio
Single Unit	\$133,404,987	\$129,018,674	\$4,386,313	103.4%
Multi-Unit	\$56,123,719	\$51,190,818	\$4,932,901	109.6%
Non-Residential	\$19,327,946	\$22,216,670	(\$2,888,724)	87.0%
Total	\$208,856,652	\$202,426,161	\$6,430,490	103.2%

** To address non-regulated program losses the Waste Services Utility was given authorization through the 2015 Operating Budget process to draw on a short-term loan from the City of Edmonton Financial Stabilization Reserve (FSR) over four years beginning in 2015.*

5.4 Single and Multi-Unit Rates

Multi-unit customer rates have been determined using a proportional method (i.e. charged 65% of Single unit rates) since 1995. As shown in the 2017 COSS, this methodological approach leads to a cost recovery ratio of 103.4% for single unit and 109.6% for multi-unit customers; a 6.2% gap between customer classes.

A key driver of costs, and therefore revenue requirements, for single and multi-unit customers is the tonnage of waste received from each group. While a detailed analysis of tonnage for the 2017 COSS showed a 72% / 28% split between single and multi-units, further analysis, including a review of 2018 actual tonnage received, will be undertaken before adjusting the methodological approach. In addition, implementation of changes to the collection of grass, leaf and yard waste and the proposed Source Separated Organics (SSO) program may shift the tonnage split between single and multi-units. The results of the proposed analysis and a new methodological approach will be used to inform rates in the 2020 Utility Rate Filing.

⁴ *In the absence of the Post Closure normalization adjustment (i.e. if the entire expense of \$10,880,810 was included) the resulting Net Gain (Loss) After Non-Rate Revenues would be \$841,231.*

6.0 Financial Rate Impacts

The financial rate impacts are presented in the following. The resulting rate impacts reflect the services and processes required to support the Waste Services Utility’s mission, values, and strategic initiatives. The rate impacts have been grouped into three categories: Operating Impacts, Capital Impacts on Operating, and Other Impacts.

	2018 Approved	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
Operating Impacts	\$ 3.11	\$ 1.95	\$ 0.54	\$ 1.86	\$ 0.48
Capital Impacts	0.07	0.42	0.77	0.70	0.74
Other Impacts					
Non-rate revenue	(3.48)	0.89	0.61	(0.15)	(0.16)
Increase Customer Base	(0.56)	(0.57)	(0.73)	(0.76)	(0.80)
City of Edmonton Short Term Loan	-	(0.33)	(0.39)	(0.35)	(0.23)
Rate of Return	1.89	(1.21)	0.38	(0.10)	1.21
SUBTOTAL	(2.15)	(1.22)	(0.13)	(1.36)	0.02
TOTAL RATE IMPACTS	\$ 1.03	\$ 1.15	\$ 1.18	\$ 1.20	\$ 1.24

Operating Impacts

- The increase in Operating Impacts from the 2018 budget includes an anticipated increase to external services due to population growth, increased waste volume and new contract rates for curbside and multi-unit services as well as increased operation of the Waste to Biofuels Facility (owned and operated by a third party) which impacts the rate through the Refuse Derived Fuel Facility (RDF) feedstock production resulting in higher material and utility costs.

Capital Impacts

- Capital impacts result from amortization and interest changes from the Capital Plan as outlined in Section 12.0 of this Rate Filing. Increased net amortization is associated with the upcoming commissioning of new facilities including the Refuse Derived Fuel Dryer, Anaerobic Digestion Facility, site infrastructure and facility projects, and growth vehicle and equipment purchases. Increases in interest are related to funding new infrastructure such as

the refurbishment of the Edmonton Compost Facility, implementation of a new asset management program, capital improvements for efficiency and safety and waste program changes commencing in 2019.

Other Impacts

- Contributions to the decrease in non-rate revenue include decreased revenue from commodity market growth on the sale of recyclable materials and lower biosolids revenue.
- Based on current economic conditions and housing starts the Customer Rate Base is forecast to grow in 2019. This growth allows regulated revenue to be allocated over a larger base therefore controlling the per unit Residential Customer Rate increase. The greater number of residential waste collection pick-ups will generate higher regulated revenue which will be used to offset the associated residential waste collection operational costs.
- To address non-regulated program losses and achieve target cash balances, the Waste Services Utility was given authorization through the 2015 Operating Budget process to draw on a short-term loan from the City of Edmonton Financial Stabilization Reserve (FSR) over four years beginning in 2015. This loan ensures non-regulated losses are covered by the FSR loan as opposed to regulated revenues and assists in reducing non-regulated rate increases.
- Approval of the Waste Management Utility Fiscal Policy C588A resulted in changes to the rate revenue calculation. A requirement for Pay As You Go (PAYG) funding is now included as part of the rate revenue calculation to ensure sufficient cash is generated to meet the Utility's current and future capital needs. The Rate of Return is calculated to achieve a Net Income position to meet cash and/or PAYG targets. This places greater emphasis on long-term planning and the financial sustainability of the Utility.

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7.0 Financial Indicators & Risk Allowance

(in thousands of dollars)

Waste Management Utility Fiscal Policy C558A was adopted by City Council on September 23, 2014. The updated policy focuses on four Financial Indicators used to monitor the financial health of the Utility as illustrated below:

	Actual 2017	Budget 2018	Forecast 2018	Proposed 2019	Forecast								
					2020	2021	2022	2023	2024	2025	2026	2027	2028
1 Rate Sufficient to Meet Expenditures and Cash Flow													
Net Income (\$000s)	\$ 10,775	\$ 19,396	\$ 14,138	\$ 12,317	\$ 12,329	\$ 10,584	\$ 14,641	\$ 15,682	\$ 16,898	\$ 15,163	\$ 11,619	\$ 12,657	\$ 12,983
<i>Target: Positive Net Income</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
2 Cash Position (\$000s)													
Pay As You Go Requirement	19,597	14,274	21,159	19,861	19,028	17,280	15,923	16,784	12,638	18,772	21,259	22,643	22,643
Risk Allowance	2,175	3,122	3,122	3,366	3,572	3,855	3,937	4,438	4,315	4,089	4,715	4,843	5,093
Target Cash Position	21,772	17,396	24,281	23,227	22,600	21,135	19,860	21,222	16,953	22,861	25,974	27,486	27,736
Actual Cash Balance	50,860	18,626	61,383	53,471	39,560	23,023	21,646	21,649	25,330	33,021	37,823	42,219	46,006
<i>Actual Cash >= Target</i>	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>Cash Over Target (\$000s)</i>	29,088	1,230	37,102	30,244	16,960	1,888	1,786	427	8,377	10,160	11,849	14,733	18,270
3 Residential Customer Rate Impacts													
<u>Single Unit</u>													
Monthly Billing Increase	\$ 1.90	\$ 1.03	\$ 1.03	\$ 1.15	\$ 1.18	\$ 1.20	\$ 1.24	\$ 1.16	\$ 1.15	\$ 1.11	\$ 0.81	\$ 0.82	\$ 0.84
Impact of Customer Rate	4.4%	2.3%	2.3%	2.5%	2.5%	2.5%	2.5%	2.3%	2.2%	2.1%	1.5%	1.5%	1.5%
Monthly Unit Rate	\$ 44.90	\$ 45.93	\$ 45.93	\$ 47.08	\$ 48.26	\$ 49.46	\$ 50.70	\$ 51.86	\$ 53.01	\$ 54.12	\$ 54.93	\$ 55.75	\$ 56.59
<u>Multi Unit</u>													
Monthly Billing Increase	\$ 1.23	\$ 0.67	\$ 0.67	\$ 0.75	\$ 0.77	\$ 0.78	\$ 0.81	\$ 0.75	\$ 0.75	\$ 0.72	\$ 0.53	\$ 0.53	\$ 0.55
Impact of Customer Rate	4.4%	2.3%	2.3%	2.5%	2.5%	2.5%	2.5%	2.3%	2.2%	2.1%	1.5%	1.5%	1.5%
Monthly Unit Rate	\$ 29.19	\$ 29.85	\$ 29.85	\$ 30.60	\$ 31.37	\$ 32.15	\$ 32.96	\$ 33.71	\$ 34.46	\$ 35.18	\$ 35.71	\$ 36.24	\$ 36.79
<i>Target: Stable, consistent rate increases</i>	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
4 Financing of Capital Investments													
Debt to Net Assets Ratio	86.3%	73.3%	79.4%	75.4%	73.6%	73.3%	73.7%	72.7%	71.4%	69.3%	66.9%	64.3%	61.3%
<i>Target: May vary between 50% and 70%</i>	No	No	No	No	No	No	No	No	No	Yes	Yes	Yes	Yes

2017 Net Income: For the purposes of this rate filing, 2017 net income was restated to account for deferral of the financial impacts related to the structural condition of the Edmonton Composting Facility. As a result of this deferral, a regulatory asset has been established to allow the utility to recover the incurred ECF expenses through customers rates over the next 12 years in order to maintain stable and consistent rates increases. The amortization of this regulatory asset has been included in the revenue requirement for 2019.

General Comments for Financial Indicators

Target: Rates Sufficient to Meet Expenditures

All scenarios from 2019 forward meet the requirement of generating sufficient net income to cover operating expenses.

Target: Cash Position

The target cash position for Waste Services provides for capital funding to meet Pay-As-You-Go (PAYG) requirements for the next fiscal year plus a risk allowance to mitigate exposure, such as volatility of the markets for recyclable commodities, as outlined in the Waste Management Utility Fiscal Policy C558A. As the Utility replaces the current organics processing capacity and moves toward source separation of organics, the PAYG requirement will remain high over the next 4 year period peaking at \$19.9 million in 2019 before declining to \$15.9 million in 2022.

The calculation of the risk exposure includes the following identified risks: (in thousands of dollars)

	2018 Approved	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
Recyclable Market	\$ 475	\$ 475	\$ 475	\$ 475	\$ 475
Greenhouse gas, landfill gas, 3rd party	500	500	500	500	500
REVENUE RISKS	975	975	975	975	975
Refuse Derived Fuel Processing (2017 opening)	250	-	-	-	-
Anaerobic Digestion Facility (2018 opening)	500	250	125	-	-
Leachate Removal and Treatment	-	500	500	500	500
Operational Impacts Agreements/Strategic Changes	1,397	1,641	1,972	2,380	2,462
EXPENDITURE RISKS	2,147	2,391	2,597	2,880	2,962
TOTAL RISK ALLOWANCE	3,122	3,366	3,572	3,855	3,937

The allowance for Leachate Removal and Treatment attempts to mitigate the risk associated with legacy issues with the Clover Bar landfill including the removal, treatment and containment of leachate. The Utility continues to work with internal partners, external consultants and Alberta Environment and Parks to proactively manage, close and revegetate the site.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

After accounting for the PAYG requirements and risk allowance, the cash balance is positive in all years due in part to the short term loan from the City of Edmonton Financial Stabilization Reserve (FSR) which will be utilized in 2018 to cover non-regulated losses and due to the significant cash reserves held for both the Landfill Post Closure Liability and the Bremner Lagoon Liability.

Target: Low, Stable and Consistent Rate Increases

As the Utility moves toward financial sustainability achieving stable and consistent rate increases has been given a high priority. The target will be achieved with a proposed 2.5% increase in 2019 through 2022 before declining gradually to 1.5% in 2026 and beyond.

Target: Debt to Net Assets Ratio

The Utility has re-committed itself to enhanced asset management and the thoughtful replacement of damaged assets through ongoing prioritization of capital projects. Coupled with significant strategic program changes in 2020 to 2022, the target for the Debt to Net Asset Ratio is forecast to be achieved in 2025.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

8.0 Utility Summary Schedule

(in thousands of dollars)

Line #	Reference	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast	
1	Operations and Maintenance	Schedule 9.0	\$ 180,710	\$ 174,493	\$ 175,898	\$ 182,283	\$ 6,385	3.6%	\$ 184,435	\$ 2,152	1.2%	\$ 191,675	\$ 193,611
2	Amortization of Non-Contributed Assets	Schedule 10.0	20,779	23,615	22,187	23,900	1,713	7.7%	26,683	2,783	11.6%	28,336	29,644
3	Debt Interest	Schedule 10.0	9,369	9,387	9,509	9,466	(43)	(0.5%)	9,772	306	3.2%	10,908	12,563
4	Intra-municipal Recoveries	Schedule 9.8	(10,972)	(2,958)	(2,958)	(2,946)	12	(0.4%)	(2,946)	-	-	(2,696)	(2,696)
5	Grants	Schedule 9.0	-	1,500	3,000	4,600	1,600	53.3%	-	(4,600)	(100.0%)	-	-
6	ECF Deferred Cost		-	-	-	1,309	1,309	-	1,309	-	-	1,309	1,309
	TOTAL EXPENSES		199,886	206,037	207,636	218,612	10,976	5.3%	219,253	641	0.3%	229,532	234,431
7	Non-Rate Revenue	Schedule 11.1	35,880	42,338	39,583	41,892	2,309	5.8%	34,870	(7,022)	(16.8%)	35,460	36,084
8	Rate Revenue	Schedule 11.0	174,781	183,095	182,191	189,037	6,846	3.8%	196,711	7,674	4.1%	204,656	212,988
	TOTAL REVENUES		210,661	225,433	221,774	230,929	9,155	4.1%	231,581	652	0.3%	240,116	249,072
	NET INCOME/(LOSS)	Schedule 13.0	\$ 10,775	\$ 19,396	\$ 14,138	\$ 12,317	\$ (1,821)	(12.9%)	\$ 12,328	\$ 11	0.1%	\$ 10,584	\$ 14,641

Further detailed analysis of proposed expenditures and revenues are provided in subsequent schedules.

Line 1 - Operations and Maintenance

The increase in operations and maintenance from 2018 Forecast includes additional contract cost and power charges required for the Refuse Derived Fuel facility and Anaerobic Digestion Facility, anticipated cost increases due to population growth, increased waste volume and new contract rates for curbside and multi-unit services, and increases in facility and building maintenance costs for Waste Services.

Line 2 - Amortization of Non-Contributed Assets

Increases in amortization are driven in part by the upcoming commissioning of new facilities including the Refuse Derived Fuel Dryer and the Anaerobic Digestion Facility.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

Line 6 - ECF Deferred Cost

A regulatory asset has been established to allow the utility to recover the incurred ECF expenses through customers rates over the next 12 years in order to prevent rate shock and to maintain stable and consistent rates increases. The increase in ECF deferred cost from 2018 Forecast reflects the 2019 amortization of the regulatory asset established for ratemaking purposes.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.0 Operations and Maintenance

(in thousands of dollars)

Line #	Reference	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Personnel	\$ 49,271	\$ 51,587	\$ 51,188	\$ 50,061	\$ (1,127)	(2.2%)	\$ 50,289	\$ 228	0.5%	\$ 51,941	\$ 52,214
2	Materials, Goods & Supplies	2,848	7,087	5,761	7,014	1,253	21.7%	7,140	126	1.8%	7,270	7,408
3	External Services	90,528	77,782	80,837	83,998	3,161	3.9%	85,617	1,619	1.9%	90,594	91,816
4	Fleet Services	16,411	16,756	17,210	17,464	254	1.5%	17,500	36	0.2%	17,542	17,584
5	Shared Services	10,538	10,669	10,669	9,616	(1,053)	(9.9%)	9,747	131	1.4%	9,880	10,023
6	Intra-municipal Services	2,812	2,063	2,063	5,012	2,949	142.9%	5,038	26	0.5%	5,371	5,404
7	Utilities	4,434	6,716	5,883	7,161	1,278	21.7%	7,123	(38)	(0.5%)	7,047	7,081
8	Other Expenses	3,867	1,833	2,287	1,957	(330)	(14.4%)	1,981	24	1.2%	2,030	2,081
	TOTAL O&M EXPENSES	180,710	174,493	175,898	182,283	6,385	3.6%	184,435	2,152	1.2%	191,675	193,611
9	Intra-municipal Recoveries	(10,972)	(2,958)	(2,958)	(2,946)	12	(0.4%)	(2,946)	-	-	(2,696)	(2,696)
	RECOVERIES	(10,972)	(2,958)	(2,958)	(2,946)	12	(0.4%)	(2,946)	-	-	(2,696)	(2,696)
10	Amortization of Non-Contributed Assets	20,779	23,615	22,187	23,900	1,713	7.7%	26,683	2,783	11.6%	28,336	29,644
11	ECF Deferred Cost	-	-	-	1,309	1,309	-	1,309	-	-	1,309	1,309
12	Debt Interest	9,369	9,387	9,509	9,466	(43)	(0.5%)	9,772	306	3.2%	10,908	12,563
	EXPENSES BEFORE ONE-TIMES	199,886	204,537	204,636	214,012	9,376	4.6%	219,253	5,241	2.4%	229,532	234,431
13	Grants	-	1,500	3,000	4,600	1,600	53.3%	-	(4,600)	(100.0%)	-	-
	NET EXPENSES	\$ 199,886	\$ 206,037	\$ 207,636	\$ 218,612	\$ 10,976	5.3%	\$ 219,253	\$ 641	0.3%	\$ 229,532	\$ 234,431

Line 1 to 7 - Please refer to the schedule for each line for more details.

Line 13 - Grants

The 2019 grant is a flow through, received from Alberta Innovates Energy and Environment Solutions and disbursed to the owner of the Edmonton Waste to Biofuels and Chemicals Facility. The net operating impact of these grants is zero with the offset in grant revenue (Schedule 11.1).

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.1 Personnel

(in thousands of dollars)

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Wages	\$ 36,185	\$ 37,289	\$ 37,290	\$ 36,776	\$ (514)	(1.4%)	\$ 36,816	\$ 40	0.1%	\$ 38,003	\$ 38,033
2	Overtime	596	948	948	948	-	-	948	-	-	1,198	1,198
3	Allowances and Benefits	12,490	13,350	12,950	12,337	(613)	(4.7%)	12,525	188	1.5%	12,740	12,983
	TOTAL PERSONNEL	\$ 49,271	\$ 51,587	\$ 51,188	\$ 50,061	\$ (1,127)	(2.2%)	\$ 50,289	\$ 228	0.5%	\$ 51,941	\$ 52,214

Personnel costs include Wages, Overtime, Employment Allowances, and Benefits. The City of Edmonton Capital and Operating Budget System (COBS) utilizes the City's payroll system as the source for the personnel budget for both wages and benefits, thereby providing a reliable and consistent source of information. Vacant positions are set at mid-range with family benefits. Included in the 2019 Proposed Budget is an assumption of a vacancy discount of 5% for all positions.

Line 1 - Wages

The change in wages from 2018 Forecast reflects merit increases for current positions and an increase in temporary staff cost for Waste Collections and Sustainable Waste Processing; offset by a reduction in wages due to the transfer of the Social Marketing team to Communications and Public Engagement and heavy duty mechanics to Fleet and Facility Services.

Line 2 - Overtime

Overtime is expected to increase during the roll out of new waste diversion programs due to alternate collection activities for grass, leaf and yard waste and the source separated organics program.

Line 3 - Allowances and Benefits

Benefits mainly consist of Local Authorities Pension Plan (LAPP), Canada Pension Plan, Employment Insurance, Major Medical and Dental Plan, Group Life Insurance and Health Care Spending Account. The change in allowances and benefits from 2018 Forecast reflects lower benefits cost due to transfer of positions to other departments and lower anticipated medical, dental, life insurance and health care spending account costs.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.2 Materials, Goods, & Supplies

(in thousands of dollars)

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Collection Services	\$ 662	\$ 1,091	\$ 1,086	\$ 1,065	\$ (21)	(1.9%)	\$ 1,100	\$ 35	3.3%	\$ 1,120	\$ 1,141
2	Organics	926	674	674	1,311	637	94.5%	1,331	20	1.5%	1,355	1,381
3	Integrated Processing & Transfer Operations	217	3,511	2,510	2,526	16	0.6%	2,564	38	1.5%	2,611	2,660
4	Haul and Landfill Operations	17	18	18	20	2	11.1%	20	-	-	20	21
5	Construction and Demolition Facility	482	558	558	593	35	6.3%	602	9	1.5%	613	624
6	Other	544	1,235	915	1,499	584	63.8%	1,523	24	1.6%	1,551	1,581
	TOTAL MATERIALS, GOODS & SUPPLIES	\$ 2,848	\$ 7,087	\$ 5,761	\$ 7,014	\$ 1,253	21.7%	\$ 7,140	\$ 126	1.8%	\$ 7,270	\$ 7,408

Line 2 - Organics

The increase in Organics operations from 2018 Forecast includes direct material cost for the Cure Site and new Anaerobic Digestion Facility.

Line 6 - Other

The increase in other from the 2018 Forecast includes hired equipment and direct material for the Aggregates program.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.3 External Services

(in thousands of dollars)

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Waste Collection Services	\$ 20,762	\$ 27,230	\$ 27,234	\$ 28,966	\$ 1,732	6.4%	\$ 30,348	\$ 1,382	4.8%	\$ 34,714	\$ 35,347
2	Materials Recovery Facility	8,278	8,035	7,285	8,582	1,297	17.8%	8,970	388	4.5%	9,142	9,318
3	Organics	16,544	15,406	12,906	13,459	553	4.3%	12,222	(1,237)	(9.2%)	12,585	12,913
4	Integrated Processing & Transfer Operations	6,353	9,117	6,417	7,815	1,398	21.8%	8,185	370	4.7%	8,645	8,953
5	Haul and Landfill Operations	14,448	5,413	13,802	11,294	(2,508)	(18.2%)	11,571	277	2.5%	10,415	9,898
6	Construction and Demolition Facility	3,563	2,758	2,758	2,953	195	7.1%	3,094	141	4.8%	3,153	3,214
7	Customer Billing Services	3,942	4,025	4,025	4,122	97	2.4%	4,221	99	2.4%	4,322	4,426
8	Other	16,638	5,798	6,410	6,807	397	6.2%	7,006	199	2.9%	7,618	7,747
	TOTAL EXTERNAL SERVICES	\$ 90,528	\$ 77,782	\$ 80,837	\$ 83,998	\$ 3,161	3.9%	\$ 85,617	\$ 1,619	1.9%	\$ 90,594	\$ 91,816

Line 1 - Waste Collection Services

Collection Services external contracts include single and multi-unit residential refuse and recycling collection as well as costs for contracted equipment, services at Eco Stations and other Collection Services programs.

Contract work is anticipated to increase due to population growth, increased waste volume and new contract rates for curbside and multi-unit services. Current contracts are adjusted annually using a cost index that includes CPI, fuel and labour to better reflect annual changes in direct operating costs.

Line 2 - Materials Recovery Facility

The Materials Recovery Facility sorts and processes recyclables collected through the blue bag and recycling depot programs. Enhanced screening of materials required to address lower tolerances for contamination in the world market have a negative effect on costs.

Line 3 - Organics

The Anaerobic Digestion Facility is anticipated to be commissioned by the end of 2018 allowing for an additional 48,000 tonnes of organic material to be composted resulting in increased operational costs. These costs will be partially offset by potential savings from the seasonal operation of the ECF. Starting in 2020 and ending in 2022, net savings from the closure of the ECF have been incorporated.

Line 4 - Integrated Processing & Transfer Operations (IPTF)

Feedstock for the Waste to Biofuels and Chemicals facility is prepared at the Refuse Derived Fuel facility, located within the IPTF, resulting in higher contract costs for the IPTF. Waste Services pays a contractually agreed upon fee to Edmonton Waste to Biofuels and Chemicals Facility for the conversion of feedstock into alcohol fuels. The fee includes a tipping fee for the delivery of acceptable feedstock to the facility. Most of the increased costs incurred by the IPTF Operations and Biofuels Facility contract will be offset by a reduction in the costs of hauling and landfill, as demonstrated in Line 5 - Haul and Landfill Operations.

Line 5 - Haul and Landfill Operations

Hauling and Landfill Operations represents the contract fees for all of Waste Services Utility operations. Several factors influencing this budget include additions for start up of the Waste to Biofuels and Chemicals Facility, a reduction in hauling related to the commissioning of the Anaerobic Digestion Facility and Refuse Derived Fuel Facility, and anticipated savings from renegotiated landfill disposal fees.

Line 6 - Construction and Demolition Facility

The Construction & Demolition Facility is operated by City staff with significant additional contracted services including the provision of labour, equipment maintenance services and supplements to the Utility's operations to meet peak demands in grinding and crushing of wood. The wood grinding operation requires more extensive contract work in order to minimize the risk of fire and to prepare feedstock for Enerkem.

Line 7 - Customer Billing Services

Waste Services has a contract with EPCOR for the provision of customer billing and collection services. The 2019 through 2020 rate estimates, as provided by EPCOR, include a 2.4% increase per invoice. The increases include an allowance for the replacement of the customer database (UIS) system.

Line 8 - Other

Other contract costs include Community Relations and Program Management, Administrative Services, and other facilities such as Eco Stations, Edmonton Waste Services Centre Operations, Advanced Energy Research Facility, Marketing Compost Facility, Research & Development and Environmental.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.4 Fleet Services

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1 Fleet Reserve Contribution	\$ 120	\$ 87	\$ 87	\$ 86	\$ (1)	(1.1%)	\$ 81	\$ (5)	(5.8%)	\$ 81	\$ 81
2 Fuel	3,949	4,120	4,574	4,153	(421)	(9.2%)	4,194	41	1.0%	4,236	4,278
3 Direct Charge & Repairs	12,342	12,549	12,549	13,225	676	5.4%	13,225	-	-	13,225	13,225
TOTAL FLEET SERVICES	\$ 16,411	\$ 16,756	\$ 17,210	\$ 17,464	\$ 254	1.5%	\$ 17,500	\$ 36	0.2%	\$ 17,542	\$ 17,584

As Fleet Services recovers 100 percent of branch costs, a portion of indirect branch overhead is charged to Waste Services. The indirect overhead is allocated through work order fees, vendor work charges, and fuel surcharges. The remaining overhead costs are recovered through shop rates on shop labour hours. Indirect overhead includes branch administration, training, engineering, procurement, safety, client relations and facility and equipment maintenance. Estimates for Fuel and Direct Charges & Repairs are estimated by Fleet Services in consultation with Waste Services and aligned with Fleet Services four year operating budget.

Waste Services Utility is moving towards management of their vehicle and equipment replacement which has resulted in a decrease to the reserve contribution to the Fleet Services Replacement Reserve. This results in Waste Services purchasing vehicles through its own capital program rather than through Fleet Services. As older equipment purchased by Fleet gets replaced, the remaining reserve contribution will continue to decline.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.5 Shared Services

(in thousands of dollars)

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Corporate Allocation (Central Management)	\$ 1,500	\$ 1,545	\$ 1,545	\$ 1,697	\$ 152	9.8%	\$ 1,848	\$ 151	8.9%	\$ 2,000	\$ 2,151
2	Communications & Public Engagement	464	478	478	479	1	0.2%	480	\$1	0.2%	482	483
3	Financial Services	2,111	2,175	2,175	2,071	(104)	(4.8%)	1,968	(103)	(5.0%)	1,865	1,762
4	Safety	-	-	-	118	118	-	149	31	26.3%	181	213
5	Customer Information Services	541	557	557	559	2	0.4%	563	4	0.7%	565	567
6	Human Resources	1,067	1,099	1,099	1,019	(80)	(7.3%)	1,020	1	0.1%	1,027	1,032
7	Law	272	280	280	284	4	1.4%	287	3	1.1%	291	294
8	Corporate Procurement and Supply Services	432	445	445	496	51	11.5%	547	51	10.3%	598	649
9	Information Technology	2,084	2,146	2,146	2,120	(26)	(1.2%)	2,095	(25)	(1.2%)	2,071	2,047
10	Real Estate & Housing	646	697	697	773	76	10.9%	790	17	2.2%	800	825
11	Facilities and Landscape Infrastructure	1,421	1,247	1,247	-	(1,247)	(100.0%)	-	-	-	-	-
TOTAL SHARED SERVICES		\$ 10,538	\$ 10,669	\$ 10,669	\$ 9,616	\$ (1,053)	(9.9%)	\$ 9,747	\$ 131	1.4%	\$ 9,880	\$ 10,023

The City of Edmonton employs a Shared Services model whereby support services required for the operations of all City businesses are provided through centralized areas of expertise. This approach takes advantage of efficiencies gained through economies of scale and opportunities to provide more robust systems and services (e.g. technology related services). The Waste Management Utility Fiscal Policy C558A requires that the Utility operate under a full cost approach thus requiring the Utility to pay for its portion of shared services.

As part of the City's 2019-2022 Operating Budget development, Shared Service providers performed a review of their costs and the shared service allocation model resulting in updates to the cost allocation drivers. This change resulted in several changes to the allocation of shared service costs from the service providers to the Utility. One new service provider (Employee Services) was also added to the shared service pool. The net reduction in shared service cost from 2018 to 2019 is primarily due to the transfer of Facilities and Landscape Infrastructure from being a shared service provider to on-demand service provider (described in section 9.6).

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.6 Intra-Municipal Services

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	\$ 101	\$ 104	\$ 104	\$ 963	\$ 859	826.0%	\$ 963	-	-	\$ 963	\$ 963
2	190	202	202	67	(135)	(66.8%)	67	-	-	67	67
3	178	195	195	136	(59)	(30.3%)	136	-	-	136	136
4	246	211	211	56	(155)	(73.5%)	56	-	-	364	371
5	197	243	243	364	121	49.8%	364	-	-	364	364
6	53	64	64	83	19	29.7%	83	-	-	83	83
7	42	645	645	1,758	1,113	172.6%	1,758	-	-	1,758	1,758
8	1,805	399	399	1,585	1,186	297.2%	1,611	26	1.6%	1,636	1,662
TOTAL INTRA-MUNICIPAL SERVICES	\$ 2,812	\$ 2,063	\$ 2,063	\$ 5,012	\$ 2,949	142.9%	\$ 5,038	\$ 26	0.5%	\$ 5,371	\$ 5,404

Intra-Municipal Services are charges for on-demand services provided through other City of Edmonton programs which are not incorporated in shared services charges. These are direct charges for services such as dedicated support for communication and engagement initiatives, on demand building repairs and maintenance, posting of vacant positions to job sites, and security services for special events. In 2019, as part of the strategic review of Waste Services operations, a review of the key intra-municipal services functions required to support the Utility will be completed including clarifying the resources, deliverables, and approximate costs associated with these services and, where appropriate, work to establish service level agreements.

Line 1 - Communications & Public Engagement

The increase in direct charges from 2018 Forecast includes the transfer of 6.0 FTEs and related cost for the social marketing team from Waste Services to Communications and Public Engagement. These costs were previously included under Personnel (Schedule 9.1).

Line 5 - Corporate Procurement and Supply Services

The increase in direct charge from 2018 Forecast includes additional costs for dedicated resources for procurement services from Corporate Procurement and Supply Services.

Line 7 - Facilities and Landscape Infrastructure

During the City's 2019-2022 Operating Budget process, Facilities and Landscape Infrastructure was transferred from being a shared service provider to an on-demand service provider. The increase in direct charge from 2018 Forecast is offset by reductions to shared service charges (Schedule 9.5).

WASTE SERVICES UTILITY

2019 Utility Rate Filing

Line 8 - Other

The increase in Other costs includes the 6.0 FTE transferred to City Operations Occupational Health and Safety and support for the City Operations Deputy City Managers Office.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.7 Utilities

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1 Power	\$ 3,066	\$ 4,545	\$ 3,545	\$ 4,791	\$ 1,246	35.1%	\$ 4,717	\$ (74)	(1.5%)	\$ 4,596	\$ 4,583
2 Natural Gas	917	1,607	1,774	1,798	24	1.4%	1,825	27	1.5%	1,859	1,894
3 Water	112	169	169	171	2	1.2%	174	3	1.8%	177	181
4 Other	339	395	395	401	6	1.5%	407	6	1.5%	415	423
TOTAL UTILITIES	\$ 4,434	\$ 6,716	\$ 5,883	\$ 7,161	\$ 1,278	21.7%	\$ 7,123	\$ (38)	(0.5%)	\$ 7,047	\$ 7,081

Power, natural gas, and water estimates are provided by Facility and Landscape Infrastructure, Office of Energy Management. Estimates are based on historical consumption and future forecasted rates for current service levels. Service level changes are applied to the estimates to determine the budget numbers for each utility.

Line 1 - Power

Increase in power costs as a result of:	2019
Commissioning of the High Solids Anaerobic Digestion Facility	\$ 627
Residential Collection and Eco Stations	31
Refuse Derived Fuel Facility (production of feedstock)	443
Other	145
Total	\$ 1,246

Line 2 - Natural Gas

Natural Gas consumption increased in 2018 due to the need to heat the ECF. Looking forward, the primary cause of the change to natural gas costs is the increased usage of natural gas at the Refuse Derived Fuel Facility (RDF) for production of feedstock for the Waste to Biofuels Facility.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

9.8 Intra-Municipal Recoveries

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1 Organics	\$ (6,050)	-	-	-	-	-	-	-	-	-	-
2 Nutri-Gold	(2,525)	-	-	-	-	-	-	-	-	-	-
TOTAL BIOSOLIDS PROVIDED FOR DRAINAGE UTILITY	(8,575)	-	-	-	-	-	-	-	-	-	-
3 Litter Collection Recovery	(2,078)	(1,922)	(1,922)	(1,922)	-	-	(1,922)	-	-	(1,672)	(1,672)
4 Landfill Disposal Fees	(243)	(200)	(200)	(188)	12	(6.0%)	(188)	-	-	(188)	(188)
5 Charges to Capital	(76)	(836)	(836)	(836)	-	-	(836)	-	-	(836)	(836)
TOTAL INTRA-MUNICIPAL RECOVERIES	\$ (10,972)	\$ (2,958)	\$ (2,958)	\$ (2,946)	\$ 12	(0.4%)	\$ (2,946)	-	-	\$ (2,696)	\$ (2,696)

Intra-Municipal Recoveries are billings to other areas within the City of Edmonton for services provided by Waste Services Utility. These recoveries include direct charges such as litter collection on behalf of Capital City Clean-Up and charges to other City of Edmonton areas for disposal of waste at the Edmonton Waste Management Centre.

Lines 1 and 2 - Organics and Nutri-Gold Operations

Organics and Nutri-Gold operations combined represent the total processing costs of biosolids which was an intra-municipal recovery from the Drainage Services. On September 1, 2017 Drainage Services was transferred to EPCOR. The transfer also included the Nutri-Gold Operation. All operational costs for Nutri-Gold were removed from the budget in 2018 and beyond. The recoveries for Organics have been reclassified to non-rate revenues.

Line 4 - Landfill Disposal Fees

Landfill disposal fees are charged to various City of Edmonton programs for disposal of waste at the Edmonton Waste Management Centre.

Line 5 - Charges to Capital

As in-house engineers work on capital projects, a portion of their time is capitalized instead of being charged to operating expenses.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

10.0 Amortization and Interest Expense

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
1	\$ 20,779	\$ 23,615	\$ 22,187	\$ 23,900	\$ 26,683	\$ 28,336	\$ 29,644
2	848	1,118	1,118	1,389	1,389	1,389	\$1,328
	\$ 21,627	\$ 24,733	\$ 23,305	\$ 25,289	\$ 28,072	\$ 29,725	\$ 30,972
3	\$ 9,348	\$ 8,278	\$ 9,063	\$ 8,279	\$ 7,581	\$ 6,905	\$ 6,226
4		1,045	398	1,126	2,120	3,923	6,255
	9,348	9,323	9,461	9,405	9,701	10,828	12,481
5	21	65	48	61	71	80	82
	\$ 9,369	\$ 9,387	\$ 9,509	\$ 9,466	\$ 9,772	\$ 10,908	\$ 12,563
	COST OF DEBT						
6	\$ 19,837	\$ 17,455	\$ 19,229	\$ 17,604	\$ 16,431	\$ 15,861	\$ 15,952
7		2,794	553	1,867	3,633	6,247	9,356
	19,837	20,249	19,782	19,471	20,064	22,108	25,308
8		4,306	462	651	914	1,305	1,790
	\$ 19,837	\$ 24,555	\$ 20,244	\$ 20,122	\$ 20,978	\$ 23,413	\$ 27,098
9	\$ 235,672	\$ 187,038	\$ 216,442	\$ 198,838	\$ 182,407	\$ 166,546	\$ 150,594
10		51,012	23,276	45,324	78,033	129,518	187,149
	\$ 235,672	\$ 238,050	\$ 239,718	\$ 244,162	\$ 260,440	\$ 296,064	\$ 337,743
	\$ 231,140	\$ 244,139	\$ 237,695	\$ 241,106	\$ 252,301	\$ 278,252	\$ 316,904

Amortization expense represents the amount of asset life used during a given operating period. The rate of amortization is dependent upon the asset class, each with a predetermined estimated useful life based upon historical experience. Waste Services Utility's assets are divided into 47 different classes with useful lives varying between 3 years and extending up to 60 years. Amortization expense is calculated using the straight-line method which incurs half year expenses in the first and last year of the asset's life.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

Interest expense includes both interest for Alberta Capital Financing Authority (ACFA) debentures related to capital projects, as well as interest on short term loans from the City of Edmonton Financial Stabilization Reserve (FSR). Projected rates are provided by the City of Edmonton Budget Office and are based on historical ACFA rates and economic conditions (see section 3.0 Methodology and Key Assumptions).

Line 1 - Amortization of Non-Contributed Assets

The annual increases in amortization result from upcoming commissioning of new facilities including the Refuse Derived Fuel Dryer, Anaerobic Digestion Facility, site infrastructure and facilities projects and growth vehicle and equipment purchases. The majority of existing assets will not reach the end of their useful life for several more years.

Line 2 - Amortization of Contributed Assets

Amortization of Contributed Assets represents the amount of benefit from assets which were received or funded by third parties. The amortization from contributed assets decreases the amount of total amortization expense for the Waste Services Utility. Amortization of Contributed Assets are the benefits received from the Advanced Energy Research Facility, funded by Alberta Innovates - Energy and Environment Solutions, and EWMC Site 440 infrastructure. A large portion of Site 440 construction was funded by an external third party. The 2018 forecasted increase results from the commissioning of the Anaerobic Digestion Facility which is partially funded by Climate Change & Emissions Management Corporation and partnership funding with the University of Alberta.

Lines 5 and 8 - Short-Term Interest and Short-Term Debt Principal Repayments

Refer to Schedule 10.1 for additional details.

WASTE SERVICES UTILITY

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10.1 Short-Term Loan from the City of Edmonton

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast	2023 Forecast	2024 Forecast	2025 Forecast	2026 Forecast	2027 Forecast
1	Loan To Cover Non-Regulated Program Losses and Maintain Cash Flow											
Beginning Balance	\$ 1,425	\$ 4,306	\$ 3,232	\$ 4,056	\$ 4,709	\$ 5,338	\$ 5,451	\$ 4,599	\$ 2,317	-	-	-
Draw	1,956	-	1,286	1,304	1,543	1,418	938	-	-	-	-	-
Principal	149	4,306	462	651	914	1,305	1,790	2,282	2,318	-	-	-
Interest	21	65	48	61	71	80	82	69	35	-	-	-
Ending Balance	\$ 3,232	-	\$ 4,056	\$ 4,709	\$ 5,338	\$ 5,451	\$ 4,599	\$ 2,317	-	-	-	-

Line 1 - Loan to Cover Non-Regulated Program Losses and Maintain Cash Flow

To address non-regulated program losses and achieve target cash balances, the Waste Services Utility was given authorization through the 2015 Operating Budget process to draw on a short-term loan from the City of Edmonton Financial Stabilization Reserve (FSR) over four years beginning in 2015. This ensures that non-regulated losses are covered by the FSR loan as opposed to regulated revenues and assists in reducing non-regulated rate increases. The first draw of \$1.57 million was December 31, 2015; no draw was made in 2016; a draw of \$1.96 million was made in 2017. This rate file incorporates additional annual draws up to December 31, 2018. Principal and Interest (1.5%) are paid annually for ten years from the first draw in 2015. Interest payments are reflected entirely within non-regulated program expenses. As part of the year end financial reporting process, the Waste Services Utility will determine the borrowing requirement to offset non-regulated program losses and cover the loan repayments. For this document a forecast draw was incorporated based on best estimates.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

11.0 Revenue Requirement

(in thousands of dollars)

Line #	Reference	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast	
1	O&M Expenses and Grants	Schedule 9.0	\$ 180,710	\$ 175,993	\$ 178,898	\$ 186,883	\$ 184,435	\$ 191,675	\$ 193,611
2	Intra-municipal Recoveries	Schedule 9.0	(10,972)	(2,958)	(2,958)	(2,946)	(2,946)	(2,696)	(2,696)
	Net Operations and Maintenance Expenses		169,738	173,035	175,940	183,937	181,489	188,979	190,915
3	Amortization of Non-Contributed Assets	Schedule 9.0	20,779	23,615	22,187	23,900	26,683	28,336	29,644
4	ECF Deferred Cost	Schedule 9.0	-	-	-	1,309	1,309	1,309	1,309
5	Debt Servicing - Total Interest	Schedule 9.0	9,369	9,387	9,509	9,466	9,771	10,908	12,563
	Total Net Expense		199,886	206,037	207,636	218,612	219,252	229,532	234,431
6	Return on Rate Base	Schedule 11.3	10,775	19,396	14,138	12,317	12,329	10,584	14,641
	Total Revenue Requirement		210,661	225,433	221,774	230,929	231,581	240,116	249,072
7	Less Non-Rate Revenues	Schedule 11.1	35,880	42,338	39,583	41,892	34,870	35,460	36,084
	TOTAL RATE REVENUE REQUIRED		\$ 174,781	\$ 183,095	\$ 182,191	\$ 189,037	\$ 196,711	\$ 204,656	\$ 212,988

Waste Services Utility Fiscal Policy C558A was adopted by City Council on September 23, 2014. As per this policy, "At a minimum, the projected total revenue generated will be equal to the projected expenses for the year, including sufficient cash to meet the cash flow requirements of the Utility." Costs associated with Contributed Capital, such as amortization, are excluded as these are not eligible to be funded through regulated utility rates.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

11.1 Non-Rate Revenue

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	\$ 4,911	\$ 6,100	\$ 5,200	\$ 5,598	\$ 398	7.7%	\$ 5,690	\$92	1.6%	\$ 5,806	\$ 5,928
2	5,280	7,192	6,092	6,273	181	3.0%	6,371	\$98	1.6%	6,494	6,622
3	5,826	4,177	3,200	3,240	40	1.3%	3,304	64	2.0%	3,365	3,429
4	7,810	6,714	7,464	7,704	240	3.2%	7,808	104	1.3%	7,935	8,068
5	2,796	3,310	3,310	3,360	50	1.5%	3,410	50	1.5%	3,473	3,539
6	6,372	8,538	6,337	6,261	(76)	(1.2%)	3,685	(2,576)	(41.1%)	3,752	3,825
7	2,132	4,400	4,330	4,506	176	4.1%	4,452	(54)	(1.2%)	4,534	4,621
8	480	357	-	-	-	-	-	-	-	-	-
9	269	50	650	350	(300)	(46.2%)	\$ 150	(200)	(57.1%)	101	52
10	4	1,500	3,000	4,600	1,600	53.3%	-	(4,600)	(100.0%)	-	-
TOTAL NON-RATE REVENUE	\$ 35,880	\$ 42,338	\$ 39,583	\$ 41,892	\$ 2,309	5.8%	\$ 34,870	\$ (7,022)	(16.8%)	\$ 35,460	\$ 36,084

Line 1 - Tip Fees Revenue

Tip Fee Revenues are generated by private haulers disposing of waste materials at the Edmonton Waste Management Centre (EWMC).

Line 2 - Construction and Demolition Waste Revenue

Direct tip fees collected from source segregated and mixed construction wastes are included in the Construction and Demolition Waste Facility revenues. The tip fees, when compared to the regular commercial disposal tip fees, provide an incentive for customers to recycle construction and demolition materials. The construction and demolition tip fees are reviewed annually and updated to improve cost-recovery and are in line with market rates.

Line 3 - Materials Recovery Facility Revenue

Materials Recovery Facility revenue from the sale of recyclable materials are highly influenced by both the commodities market and the US exchange rate. The 2019 proposed budget anticipates stabilization of the recyclable market following significant softening of the market in 2018.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

Line 4 - Commercial Collection

Waste Services has participated in the commercial waste market since 2011. Commercial Collections revenue is dependant on the addition and retention of commercial contracts.

Line 5 - Eco Stations Revenue

Slow growth in Eco Station usage results in an anticipated revenue increase in 2019 and beyond.

Line 6 - Organics Operation

With the transfer of Drainage Services to Epcor, recoveries for the dewatering and processing of biosolids have been reclassified from intra-municipal recoveries to non-rate revenues. In 2018, EPCOR reduced the volume of biosolids sent for processing. While similar volumes are anticipated for 2019, the closure of the ECF in the fall of 2019 will eliminate biosolids revenue leaving only recoveries for dewatering.

Line 7 - Other Program Revenue

Other Program Revenue includes revenues generated from third parties operating at the Edmonton Waste Management Centre based on agreements, which includes sharing of third party sales revenues. Also included in this category are revenues generated from environmental initiatives such as the Sale of Landfill Gas and Greenhouse Gas (GHG) credits.

Line 8 - Late Payment Penalty

An outcome of the 2017 Cost of Service Study, revenue for late payments are now included in Rate Revenue totals.

Line 9 - Interest Earnings

Investment earnings include short term interest payments received on existing cash balances. Interest earned is expected to decline in the coming years as the amount of cash reserves for the Landfill Post Closure Liability and the Bremner Lagoon Liability are reduced.

Line 10 - Grant Revenue

The flow through grant forecasted in each of 2018 and 2019 is received from Alberta Innovates and disbursed to the owner of the Edmonton Waste to Biofuels and Chemicals Facility. As the grant revenue will be transferred to the third party, it will have a net zero impact on the operating budget, as indicated by the offsetting expense on Line 13 of Schedule 9.0.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

11.2 Calculation of Rate Base

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
1 Investments in Tangible Capital Assets							
Gross Book Value - Non Contributed	\$ 527,060	\$ 585,435	\$ 557,777	\$ 605,035	\$ 661,737	\$ 740,044	\$ 824,311
Gross Book Value - Contributed	16,994	27,916	21,167	21,167	21,167	21,167	21,167
Gross Book Value - All Assets	544,054	613,351	578,944	626,202	682,904	761,211	845,478
Accumulated Depreciation - Non Contributed	235,061	260,540	255,728	282,456	310,448	340,093	371,046
Accumulated Depreciation - Contributed	4,196	5,309	5,314	6,703	8,092	9,480	10,808
Accumulated Depreciation - All Assets	239,257	265,849	261,042	289,159	318,540	349,573	381,854
Net Book Value - Non Contributed	291,999	324,895	302,049	322,579	351,289	399,951	453,265
Net Book Value - Contributed	12,798	22,607	15,853	14,464	13,075	11,686	10,359
Net Book Value - All Assets	\$ 304,797	\$ 347,502	\$ 317,902	\$ 337,043	\$ 364,364	\$ 411,637	\$ 463,624
Mid-Year Non-Contributed Assets	\$ 285,952	\$ 313,865	\$ 297,024	\$ 312,314	\$ 336,934	\$ 375,620	\$ 426,608
2 Cash Flow Requirement							
One Month Operations	16,657	16,889	17,064	17,844	17,713	18,602	19,168
RATE BASE AT MID YEAR	\$ 302,609	\$ 330,754	\$ 314,088	\$ 330,158	\$ 354,647	\$ 394,222	\$ 445,776

WASTE SERVICES UTILITY

2019 Utility Rate Filing

11.3 Return on Rate Base

(in thousands of dollars)

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
1	\$ 302,609	\$ 330,754	\$ 314,088	\$ 330,158	\$ 354,647	\$ 394,222	\$ 445,776
	Mid-Year Capital Structure						
2	76.4%	71.6%	75.7%	73.1%	70.7%	70.0%	70.4%
3	23.6%	28.4%	24.3%	26.9%	29.3%	30.0%	29.6%
	Cost Rates						
4	3.1%	2.8%	3.0%	2.8%	2.7%	2.7%	2.8%
5	3.6%	5.9%	4.5%	3.7%	3.5%	2.7%	3.3%
	Weighted Average Cost of Debt						
	3.2%	3.7%	3.4%	3.1%	3.0%	2.7%	2.9%
	Return on Rate Base						
6	9,348	9,323	9,461	9,405	9,701	10,828	12,481
7	10,775	19,396	14,138	12,317	12,328	10,584	14,641
	Total Return						
	\$ 20,123	\$ 28,719	\$ 23,599	\$ 21,722	\$ 22,029	\$ 21,412	\$ 27,122

Return on Rate Base is the net income/(loss) as a percentage of the Mid-Year Rate Base. The positive return on rate base is indicative of Waste Services Utility's increased focus on working towards financial sustainability and the need to meet Pay As You Go capital requirements.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

12.0 Capital Budget and Forecast Plan - Capital Project Summary

(in thousands of dollars)

Line #	Capital Projects	Appendix	Proposed 4 Year Capital Budget					Forecast						
			2019	2020	2021	2022	2019-2022 Total	2023	2024	2025	2026	2027	2028	2019-2028 Total
Branch-wide														
1	Facilities & Infrastructure Planning & Design	B.1	\$ 623	\$ 467	\$ 484	\$ 477	\$ 2,051	\$ 739	\$ 2,077	\$ 1,229	\$ 1,122	\$ 1,427	\$ 1,529	\$ 10,174
2	Facilities & Infrastructure Project Delivery	B.1	5,603	4,201	4,352	4,290	18,446	6,655	18,697	11,063	10,094	12,843	13,761	91,559
3	Waste Services Infrastructure Planning and Design (IIS)	B.2	5,473	1,610	1,800	400	9,283	1,000	-	3,000	500	-	-	13,783
4	Waste Services Project Delivery (IIS)	B.3	3,250	14,909	35,680	42,190	96,029	29,973	8,000	6,000	-	-	-	140,002
5			14,949	21,187	42,316	47,357	125,807	38,368	28,774	21,292	11,716	14,270	15,290	255,518
Collection Services Facilities														
6	Collection Facilities and Infrastructure		2,369	-	-	-	2,369	-	-	-	-	-	-	2,369
7	Mayfield (NW) Eco Station		-	-	-	777	777	6,075	6,925	-	-	-	-	13,777
8			2,369	-	-	777	3,146	6,075	6,925	-	-	-	-	16,146
Sustainable Waste Processing Facilities														
9	Cure Site Land Use & Development		250	500	2,925	2,925	6,600	-	-	-	-	-	-	6,600
10	Groundwater Diversion		5,000	-	-	-	5,000	-	-	-	-	-	-	5,000
11	Material Recovery Facility Renewal (MRF)		411	-	-	-	411	-	-	-	-	-	-	411
12			5,661	500	2,925	2,925	12,011	-	-	-	-	-	-	12,011
Vehicles & Equipment														
13	Waste Containers	B.4	3,074	1,930	1,998	2,070	9,072	3,400	3,500	3,600	3,700	3,778	3,827	30,877
14	WM Services Equipment Acquisition	B.5	19,272	14,086	12,951	13,905	60,214	10,483	12,620	3,901	7,574	11,518	11,932	118,242
15			22,346	16,016	14,949	15,975	69,286	13,883	16,120	7,501	11,274	15,296	15,759	149,119
Waste Program Changes														
16	Source Separated Organics Program		-	19,000	18,117	17,233	54,350	-	-	-	-	-	-	54,350
17	Grand Total		\$ 45,324	\$ 56,703	\$ 78,307	\$ 84,266	\$ 264,600	\$ 58,326	\$ 51,819	\$ 28,793	\$ 22,990	\$ 29,566	\$ 31,049	\$ 487,144

** The Southwest Waste Management Centre and Southeast Eco Station capital projects proposed in the 2018 Rate Filing are no longer included in the Waste Services Capital Plan. These profiles have been removed to make funding available for other higher priority capital projects.*

Lines 1 and 2 - Facilities & Infrastructure Planning and Design and Project Delivery Composite

These new composite profiles provide capital funding for planning and design and project delivery, which will be managed internally by Waste Services. The scope of the Facilities and Infrastructure profiles includes the capital maintenance, renewal, and upgrade of existing assets due to new or increased waste streams, safety concerns, and design improvements that increase the efficiency of Waste Services' operations. This also includes implementation of an asset management program to deliver sustainable waste services and maintain optimal service levels. Projects were prioritized using a branch-wide process that identifies and ranks projects based on strategic criteria such as environmental impact, health and safety, and alignment to strategy. Please refer to Appendix B.1

for the capital funding request to support these profiles. All projects managed by IIS and some of the larger projects managed by Waste Services will follow the Project Development & Delivery Model (PDDM) process.

Projects anticipated to be undertaken in this budget cycle include, but are not limited to:

- Design, fabrication, and installation of a surge bin to the RDF Dryer facility to provide more efficient operation within the RDF and ensure required feedstock is delivered to Enerkem.
- EWMC Site Fire Protection upgrades to address risk identified by a 3rd party consultant.
- Expansion of IPTF Locker Room to increase locker room capacity for COE and contract staff.
- Paving and Site Improvement to provide safe and efficient working conditions.

Lines 3 and 4 - Waste Services Planning and Design and Project Delivery Composites (IIS Managed)

These new composite profiles provide capital funding for planning and design and for project delivery for projects managed by Integrated Infrastructure Services (IIS). The profiles budget to support concept level planning for major capital initiatives in accordance to the City's Project Development & Delivery Model (PDDM). The PDDM is a framework to manage all capital infrastructure projects and represents best practice in project management from industry and comparable municipalities. This process ensures that sufficient information is prepared in advance of the capital budget process to support informed investment decisions, provides adequate resources for planning and design and provides an overall framework to guide the management of Waste Services' capital projects. Projects have been identified and prioritized based on strategic criteria such as environmental impact, health and safety and alignment with Branch and Corporate goals. Please refer to Appendix B.2 and B.3 for the capital funding requests to support these profiles.

Projects anticipated to be undertaken in this budget cycle include, but are not limited to, the following:

- Remediation of the Edmonton Compost Facility to meet structural integrity and safety standards.
- Upgrades to the Material Recovery Facility equipment to replace aging machinery and improve processing efficiency.
- Efficiency enhancements to the Refuse Derived Fuel facility to include a second pre-shredder and alternate offload.
- Site civil servicing projects to support the sustainability and ongoing operation of the Edmonton Waste Management Centre.

** Please note the business cases for the Edmonton Compost Facility and the Materials Recovery Facility will be brought forward to Utility Committee by Waste Services in February 2019.*

Line 6 - Collection Facilities and Infrastructure

Final year of approved profile costs for the Strathcona Eco Station upgrade has been carried forward from the 2015-2018 budget cycle. Total projected spend of \$2.8 million, of which \$0.4 million is forecasted to be spent up to 2018.

Line 9 - Cure Site Land Use and Development

This profile is carried forward from the 2015-2018 budget cycle. Of the total projected spend of \$7.0 million, \$0.4 million is forecasted to be spent in 2018 while the remaining \$6.6 million will be spent between 2019 and 2022.

Line 10 - Groundwater Diversion

This profile is carried forward from the 2015-2018 budget cycle. Of the total projected spend of \$13.3 million, \$8.3 million is forecasted to be spent in 2018 while the remaining \$5 million will be spent in 2019.

Line 11 - Material Recovery Facility Renewal

This profile is carried forward from the 2015-2018 budget cycle. Of the total projected spend of \$2.0 million, \$1.6 million is forecasted to be spent in 2018 while the remaining \$0.4 million will be spent in 2019.

Lines 13 and 14 - Waste Containers and WM Services Equipment Acquisition

These new composite profiles provide capital funding for Waste Containers and Mobile Equipment. The objective of these profiles are to replace existing assets at the end of their useful lives and provide funding for growth assets to support the current market conditions and the changing needs of Waste Services customers. For waste containers, this entails the purchase of steel bins and litter baskets used in Waste Services' residential and non-residential collection programs as well as carts required to support the initial rollout of the residential Source Separated Organics (SSO) program in 2019. The equipment acquisition profile supports the purchase and capital refurbishment of Collections and Sustainable Waste Processing equipment such as waste collection vehicles, highway tractors and trailers, shredders and compost turners. Please refer to Appendix B.4 and B.5 for the business cases to support these profiles.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

12.1 Capital Project Financing Summary

(in thousands of dollars)

Line #	Source of Financing	Proposed 4 Year Capital Budget				2019 - 2022 Total	Forecast						2019 - 2028 Total
		2019 Proposed	2020	2021	2022		2023	2024	2025	2026	2027	2028	
1	Self Liquidating Debentures	\$ 24,165	\$ 36,842	\$ 59,279	\$ 66,986	\$ 187,272	\$ 42,403	\$ 35,035	\$ 16,155	\$ 4,218	\$ 8,307	\$ 8,407	\$ 301,797
2	Pay As You Go Requirement	21,159	19,861	19,028	17,280	77,328	15,923	16,784	12,638	18,772	21,259	22,643	185,347
	Total Capital Project Financing	\$ 45,324	\$ 56,703	\$ 78,307	\$ 84,266	\$ 264,600	\$ 58,326	\$ 51,819	\$ 28,793	\$ 22,990	\$ 29,566	\$ 31,050	\$ 487,144

Line 1 - Self Liquidating Debentures

Self Liquidating Debentures are coordinated through the City of Edmonton and drawn from the Alberta Capital Financing Authority. The cost of debt varies according to economic conditions and length of term (see Section 3.0). Details on debt servicing costs are provided in Schedule 10.0.

Line 2 - Pay As You Go Requirement

With the approval of Fiscal Policy C558A on September 23, 2014, Pay As You Go requirements are incorporated into the Financial Indicators calculation for Target Cash Position as illustrated in Section 7.0 Financial Indicators. This term is used to identify the portion of a given capital project which is funded by cash (equity). Pay As You Go Requirement for the succeeding year is used in calculating a given year's target cash position.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

13.0 Segmented Reporting - Program Revenues and Expenses

(in thousands of dollars)

WASTE COLLECTION SERVICES

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Personnel	\$ 23,437	\$ 24,774	\$ 28,677	\$ 28,479	\$ (198)	(0.7%)	\$ 28,589	\$ 110	0.4%	\$ 29,511	\$ 29,661
2	Materials, Goods & Supplies	662	1,091	1,621	1,657	36	2.2%	1,701	44	2.7%	1,732	1,765
3	External Services	20,762	27,228	29,576	31,807	2,231	7.5%	33,266	1,459	4.6%	37,890	38,589
4	Fleet Services	7,972	9,360	9,367	9,408	41	0.4%	9,429	21	0.2%	9,454	9,480
5	Shared Services	313	-	-	-	-	-	-	-	-	-	-
6	Intra-municipal Services	648	396	684	1,775	1,091	159.5%	1,786	11	0.6%	1,796	1,806
7	Utilities	584	909	934	992	58	6.2%	996	4	0.4%	1,014	1,033
8	Other Expenses	225	303	508	564	56	11.0%	571	7	1.2%	581	592
	SUBTOTAL	54,603	64,061	71,367	74,682	3,315	4.6%	76,338	1,656	2.2%	81,978	82,926
9	Intra-municipal Recoveries	(132)	631	(301)	(301)	-	-	(301)	-	-	(551)	(551)
	TOTAL O&M EXPENSES	54,471	64,692	71,066	74,381	3,315	4.7%	76,037	1,656	2.2%	81,427	82,375
10	Amortization	6,444	6,940	7,030	1,098	(5,932)	(84.4%)	3,449	2,351	214.1%	5,633	7,380
11	Debt Interest	1,247	1,263	3,711	26	(3,685)	(99.3%)	26	-	-	26	27
	EXPENSES BEFORE ONE-TIME	62,162	72,895	81,807	75,505	(6,302)	(7.7%)	79,512	4,007	5.3%	87,086	89,782
12	Grant Payment	-	-	-	-	-	-	-	-	-	-	-
13	Grant Revenue	-	-	-	-	-	-	-	-	-	-	-
14	Program Revenues	(11,794)	(10,951)	(11,612)	(12,001)	(389)	3.3%	(12,085)	(84)	0.7%	(12,269)	(12,466)
15	Rate Revenues	(50,368)	(61,944)	(70,195)	(63,504)	6,691	(9.5%)	(67,427)	(3,923)	6.2%	(74,817)	(77,316)
	NET INCOME/(NET LOSS)	-	-	-	-	-	-	-	-	-	-	-

WASTE SERVICES UTILITY

2019 Utility Rate Filing

SUSTAINABLE WASTE PROCESSING

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Personnel	\$25,834	\$26,813	\$22,511	\$21,582	\$ (929)	(4.1%)	\$21,700	\$118	0.5%	\$22,430	\$22,553
2	Materials, Goods & Supplies	2,186	5,996	4,140	5,357	1,217	29.4%	5,439	82	1.5%	5,538	5,643
3	External Services	69,766	50,554	51,261	52,191	930	1.8%	52,351	160	0.3%	52,704	53,227
4	Fleet Services	8,439	7,396	7,843	8,056	213	2.7%	8,071	15	0.2%	8,088	8,104
5	Shared Services	10,225	10,669	10,669	9,616	(1,053)	(9.9%)	9,747	131	1.4%	9,880	10,023
6	Intra-municipal Services	2,164	1,667	1,379	3,237	1,858	134.7%	3,252	15	0.5%	3,575	3,598
7	Utilities	3,850	5,807	4,949	6,169	1,220	24.7%	6,127	(42)	(0.7%)	6,033	6,048
8	Other Expenses	3,642	1,530	1,779	1,393	(386)	(21.7%)	1,410	17	1.2%	1,449	1,489
	SUBTOTAL	126,106	110,433	104,531	107,601	3,070	2.9%	108,097	496	0.5%	109,697	110,685
9	Intra-municipal Recoveries	(10,840)	(3,589)	(2,657)	(2,645)	12	(0.5%)	(2,645)	-	-	(2,145)	(2,145)
	TOTAL O&M EXPENSES	115,266	106,844	101,874	104,956	3,082	3.0%	105,452	496	0.5%	107,552	108,540
10	Amortization	14,335	16,675	15,157	22,802	7,645	50.4%	23,234	432	1.9%	22,703	22,264
11	ECF Deferred Cost	-	-	-	1,309	-	-	1,309	-	-	1,309	1,309
12	Debt Interest	8,123	8,124	5,798	9,440	3,642	62.8%	9,746	306	3.2%	10,882	12,536
	EXPENSES BEFORE ONE-TIME	137,724	131,644	122,829	138,507	15,678	12.8%	139,741	1,234	0.9%	142,446	144,649
13	Grant Payment	-	1,500	3,000	4,600	1,600	53.3%	-	(4,600)	(100.0%)	-	-
14	Grant Revenue	(4)	(1,500)	(3,000)	(4,600)	(1,600)	53.3%	-	4,600	(100.0%)	-	-
15	Program Revenues	(24,082)	(29,887)	(24,971)	(25,291)	(320)	1.3%	(22,785)	2,506	(9.9%)	(23,191)	(23,618)
16	Rate Revenues	(124,413)	(121,153)	(111,996)	(125,533)	(13,537)	12.1%	(129,284)	(3,751)	3.0%	(129,839)	(135,672)
	NET INCOME/(NET LOSS)	\$ 10,775	\$ 19,396	\$ 14,138	\$ 12,317	\$ (1,821)	(12.9%)	\$ 12,328	\$11	0.1%	\$ 10,584	\$ 14,641

**Program and Rate Revenues sufficient to achieve a net income of zero are transferred from Sustainable Waste Processing to Collection Services. The net income for Waste Services is therefore wholly contained within Sustainable Waste Processing.*

WASTE SERVICES UTILITY

2019 Utility Rate Filing

13.1 Revenues and Expenses by Regulated and Non-Regulated Program

(in thousands of dollars)

REGULATED PROGRAMS

Line #		2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1	Personnel	\$ 39,956	\$ 42,462	\$ 43,383	\$ 42,864	\$ (519)	(1.2%)	\$ 43,072	\$208	0.5%	\$ 44,498	\$ 44,735
2	Materials, Goods & Supplies	3,471	6,671	5,707	6,506	799	14.0%	6,624	118	1.8%	6,744	6,872
3	External Services	80,307	72,325	70,934	72,661	1,727	2.4%	74,144	1,483	2.0%	79,259	80,474
4	Fleet Services	13,172	13,353	13,526	13,718	192	1.4%	13,747	29	0.2%	13,780	13,813
5	Shared Services	10,538	10,669	10,669	9,616	(1,053)	(9.9%)	9,747	131	1.4%	9,880	10,023
6	Intra-municipal Services	2,100	1,898	2,005	4,509	2,504	124.9%	4,534	25	0.6%	4,868	4,901
7	Utilities & Others	7,694	7,612	7,113	8,440	1,327	18.7%	8,431	(9)	(0.1%)	8,432	8,524
	SUBTOTAL	157,238	154,990	153,337	158,314	4,977	3.2%	160,299	1,985	1.3%	167,461	169,342
8	Intra-municipal Recoveries	(7,490)	(818)	(1,036)	(529)	507	(48.9%)	(531)	(2)	0.4%	(529)	(529)
	O & M EXPENSES	149,748	154,172	152,301	157,785	5,484	3.6%	159,768	1,983	1.3%	166,932	168,813
9	Amortization	19,893	22,717	21,353	23,184	1,831	8.6%	26,036	2,852	12.3%	27,760	29,194
10	ECF Deferred Cost	-	-	-	1,309	-	-	1,309	-	-	1,309	1,309
11	Debt Interest	9,348	9,322	9,329	9,278	(51)	(0.5%)	9,580	302	3.3%	10,712	12,371
	EXPENSES BEFORE ONE-TIME	178,989	186,213	182,983	191,556	8,573	4.7%	196,693	5,137	2.7%	206,713	211,687
12	Grant Payment		(1,376)	(2,419)	(3,710)	(1,291)	53.4%	-	3,710	(100.0%)	-	-
13	Grant Revenue	4	1,376	2,419	3,710	1,291	53.4%	-	(3,710)	(100.0%)	-	-
14	Program Revenues	16,935	18,972	16,216	16,140	(76)	(0.5%)	13,855	(2,285)	(14.2%)	14,058	14,276
15	Rate Revenues	174,781	183,095	182,191	189,037	6,846	3.8%	196,711	7,674	4.1%	204,656	212,988
	NET INCOME/(LOSS)	\$ 12,731	\$ 15,854	\$ 15,424	\$ 13,621	\$ (1,803)	(11.7%)	\$ 13,873	\$252	1.9%	\$ 12,001	\$ 15,577

WASTE SERVICES UTILITY

2019 Utility Rate Filing

NON-REGULATED PROGRAMS

Line #	2017 Actual	2018 Budget	2018 Forecast	2019 Proposed	YoY \$ Variance	YoY % Variance	2020 Forecast	YoY \$ Variance	YoY % Variance	2021 Forecast	2022 Forecast
1 Personnel	\$ 9,315	\$ 9,125	\$ 7,805	\$ 7,197	\$ (608)	(7.8%)	\$ 7,217	\$20	0.3%	\$ 7,443	\$ 7,479
2 Materials, Goods & Supplies	(623)	416	54	508	454	840.7%	516	8	1.6%	526	536
3 External Services	10,221	5,457	9,903	11,337	1,434	14.5%	11,472	135	1.2%	11,335	11,342
4 Fleet Services	3,239	3,403	3,684	3,746	62	1.7%	3,753	7	0.2%	3,762	3,771
5 Intra-municipal Services	712	165	58	503	445	767.2%	504	1	0.2%	503	503
6 Utilities	608	937	1,057	678	(379)	(35.9%)	673	(5)	(0.7%)	645	638
SUBTOTAL	23,472	19,503	22,561	23,969	1,408	6.2%	24,135	166	0.7%	24,214	24,269
7 Intra-municipal Recoveries	(3,482)	(2,140)	(1,922)	(2,417)	(495)	25.8%	(2,417)	-	-	(2,167)	(2,167)
TOTAL O&M EXPENSES	19,990	17,363	20,639	21,552	913	4.4%	21,718	166	0.8%	22,047	22,102
8 Amortization	886	898	834	716	(118)	(14.1%)	647	(69)	(9.6%)	576	450
9 Debt Interest	21	65	180	188	8	4.4%	192	4	2.1%	196	192
EXPENSES BEFORE ONE-TIME	20,897	18,325	21,653	22,456	803	3.7%	22,557	101	0.4%	22,819	22,744
10 Grant Payment	-	(124)	(581)	(890)	(309)	53.2%	-	890	(100.0%)	-	-
11 Grant Revenue	-	124	581	890	309	53.2%	-	(890)	(100.0%)	-	-
12 Program Revenues	18,941	21,866	20,367	21,152	785	3.9%	21,015	(137)	(0.6%)	21,402	21,808
NET INCOME/(NET LOSS)	\$ (1,956)	\$ 3,541	\$ (1,286)	\$ (1,304)	\$ (18)	1.4%	\$ (1,542)	\$ (238)	18.3%	\$ (1,417)	\$ (936)

* To address non-regulated program losses and achieve target cash balances, the Waste Services Utility was given authorization through the 2015 Operating Budget process to draw on a short-term loan from the City of Edmonton Financial Stabilization Reserve (FSR) over four years beginning in 2015. This ensures that non-regulated losses are covered by the FSR loan as opposed to regulated revenues and assists in reducing non-regulated rate increases.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

13.2 Regulated Activities Expense Changes

(in thousands of dollars)

Line #		2018 Forecast	Customer Growth	Consumption	Inflation	Efficiencies (Note 1)	Intra-municipal Transfers (Note 2)	Other (Note 3)	2019 Proposed
1	Personnel	\$ 43,383	-	-	\$ 869	-	\$ (1,388)	-	\$ 42,864
2	Materials, Goods & Supplies	5,707	70	644	85	-	-	-	6,506
3	External Services	70,934	867	1,803	1,057	(2,000)	-	-	72,661
4	Fleet Services	13,526	-	(488)	-	-	680	-	13,718
5	Shared Services	10,669	-	-	194	-	(1,247)	-	9,616
6	Intra-municipal Services	2,005	-	549	-	-	1,955	-	4,509
7	Utilities & Other Expenses	7,113	-	1,221	106	-	-	-	8,440
	SUBTOTAL	153,337	937	3,729	2,311	(2,000)	-	-	158,314
8	Intra-municipal Recoveries	(1,036)	-	-	-	-	-	507	(529)
	O & M EXPENSES	\$ 152,301	\$ 937	\$ 3,729	\$ 2,311	\$ (2,000)	-	\$ 507	\$ 157,785

Line 1 - Personnel

Inflation reflects the merit increases for current positions. Intra-municipal transfers is related to FTE transfers to Occupational Health and Safety (OH&S), Communications and Public Engagement and Fleet Services under Note 2.

Line 2 - Materials Goods & Supplies

Consumption costs are related to increased volume from the Anaerobic Digestion Facility (ADF).

Line 3 - External Services

Increase in the number of customers represents the additional costs to provide service to a larger customer base. Consumption is related to the operation of the Waste to Biofuels and Chemicals Facility and the ADF. Efforts to reduce expenditures within Waste Services is identified as an Efficiency under Note 1.

Line 4 - Fleet Services

The overall decrease in fuel costs is based on the fuel forecast provided by Fleet Services. The transfer of 6.0 FTEs under intra-municipal transfers is reflected under Note 2.

Line 7 - Utilities & Other Expenses

Consumption represents the increases to power associated with the RDF and ADF.

Note 1: Efficiencies are part of Waste Services' review of contracts to Regulated Programs only.

Note 2: Intra-municipal transfers consist of regulated portion of FTE transfers from Waste Services to OH&S, Communications and Public Engagement and Fleet Services. Costs are now charged to Waste Services through Fleet Services and Intra-Municipal Services. Also, during the City's 2019-2022 Operating Budget process, Facilities and Landscape Infrastructure was transferred from being a shared service provider to an on-demand service provider.

Note 3: Other changes in intra-municipal recoveries are related to changes in allocation between the Regulated & Non-Regulated Programs as a result of the 2017 Cost of Service Study.

WASTE SERVICES UTILITY

2019 Utility Rate Filing

14.0 Historical Trends

(in thousands of dollars)

Line #	Reference	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Forecast	2019 Proposed	
1	Operations and Maintenance	Schedule 9.0	\$ 121,371	\$ 131,901	\$ 141,496	\$ 155,604	\$ 164,316	\$ 180,710	\$ 175,898	\$ 182,283
2	Amortization of Non-Contributed Assets	Schedule 10.0	16,099	17,074	17,466	19,227	20,310	20,779	22,187	23,900
4	Debt Interest	Schedule 10.0	10,124	10,104	9,852	9,750	9,588	9,369	9,509	9,466
5	Intra-municipal Recoveries	Schedule 9.8	(8,806)	(11,649)	(11,501)	(13,680)	(14,932)	(10,972)	(2,958)	(2,946)
6	Grants	Schedule 9.0	3,700	3,700	4,000	2,005	2,000	-	3,000	4,600
7	ECF Deferred Cost		-	-	-	-	-	-	-	1,309
	TOTAL EXPENSES		142,488	151,130	161,313	172,906	181,282	199,886	207,636	218,612
8	Non-Rate Revenue	Schedule 11.1	25,394	26,538	28,379	27,037	28,772	35,880	39,583	41,892
9	Rate Revenue	Schedule 11.0	113,325	122,403	133,177	148,611	163,010	174,781	182,191	189,037
	TOTAL REVENUES		138,719	148,941	161,556	175,648	191,782	210,661	221,774	230,929
	NET INCOME/(LOSS)	Schedule 13.0	\$ (3,769)	\$ (2,189)	\$ 243	\$ 2,742	\$ 10,500	\$ 10,775	\$ 14,138	\$ 12,317

Waste Services Utility Customer Counts

	2012 Actual	2013 Actual	2014 Actual	2015 Actual	2016 Actual	2017 Actual	2018 Forecast	2019 Proposed	2020 Forecast	2021 Forecast	2022 Forecast
Single Unit	190,952	195,525	200,475	206,576	211,145	214,900	216,495	219,141	235,339	238,093	240,905
Multi Unit	149,989	154,850	158,821	163,636	169,386	174,196	175,489	177,634	166,321	168,553	170,833

* Includes the reclassification of 13,500 customers from Multi-Unit to Single Unit in 2020. Refer to Sec 3.0 for detailed information.

All Customer Counts shown represent December 31st balances. For budget and forecast purposes the utility rates are calculated using a phased-in increase to Customer Counts over a given year to ensure representation of consistent growth. As a result, mid-year customer counts are used in these calculations.

Appendix A: Waste Services Utility Operating Business Cases

There are no Waste Services Operating Business Cases for the 2019 Utility Rate Filing.

Appendix B: Waste Services Utility Capital Business Cases & Capital Funding Requests

The following business cases support the capital funding requests outlined in Schedule 12.0 Capital Budget and Forecast Plan:

B.1 Waste Services Facilities and Infrastructure Composite Upgrade/Renewal - Capital Funding Request

B.2 Waste Services IIS Infrastructure Planning and Design Composite - Capital Funding Request

B.3 Waste Services IIS Infrastructure Delivery Composite - Capital Funding Request

B.4 Waste Services Containers - Business Case

B.5 Waste Services Vehicles and Equipment - Business Case

Appendix C: Waste Services - 2017 Cost of Service Study - Executive Summary

The following report supports the information provided in Schedule 5.0 Cost of Service Study:

C.1 Waste Services – 2017 Cost of Service Study - Final Executive Summary - October 12, 2018 - Grant Thornton LLP