



CITY OF EDMONTON | WASTE SERVICES

BUSINESS PLAN

2019–2022

Edmonton

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INTRODUCTION

Municipalities are continuously being challenged to divert more waste from landfills and reduce their carbon footprint. 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 that end, Waste Services is developing an integrated 25-year Strategic Outlook that will ensure Edmontonians receive maximum economic and environmental benefits while minimizing the cost increases of managing solid waste. Elements that will form part of the strategic outlook include the City Auditor's recommendations, as well as the City's own internal review processes. Significant changes to the waste management program are anticipated as a result in curbside collection of grass, leaf and yard waste and the implementation of a source separated organics program. Strategic approaches are also being investigated for the following initiatives: adopting the goal of being a "zero waste" city, broadening waste diversion strategies into the multi-unit sector, increasing waste diversion in the non-residential sector, implementing additional waste prevention and reduction initiatives, including potential programs to ban single-use plastics and reducing food waste across all sectors and collaborating with regional partners.

The 2019–2022 Waste Services Business Plan provides an overview of how the Branch will begin to achieve these commitments. Over the next four years, Waste Services aims to increase the amount of waste diverted from landfill; identify opportunities for the recovery of valuable resources; partner with other 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.

The 2019–2022 Waste Services Business Plan also provides an overview of how the Branch is transforming its operations. Through the development of a performance management framework, the Branch 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.

Over the the next four years, Waste Services will deliver programs and services that will help move Edmonton toward Council's goal of 90 percent residential diversion from landfill. They will also ensure fiscal accountability with minimal stable rate increases, continuous business improvements and a renewed focus on safety, employees and customers.



MESSAGE FROM THE BRANCH MANAGER

Waste is one of the biggest environmental challenges of our time. We all create waste and need to deal with it in a responsible way. Edmontonians generate about 260,000 tonnes of residential waste per year—that's a column of garbage the size of EPCOR Tower but four times the height.

Waste Services is in a period of change and transition. How we collect waste and how households are asked to manage the waste they set out will undergo significant change as we seek to ensure that the goals we have set for our system—90 percent waste diversion—are achievable with the programs and technologies we have in place.

We are changing the way we address this challenge by establishing industry best-practice programs, developing a performance management framework to guide decision making, optimizing operating and capital expenditures, implementing efficiencies, managing risks and putting our

employees and customers first. While Waste Services strategic transition can present numerous challenges, I am proud of how collaborative and enthusiastic our team has been with embracing these new opportunities and how their dedication and commitment to delivering quality service to all our customers remains a top priority.

I would also like to acknowledge residents, businesses and other organizations that are helping us minimize our environmental impact through reducing, reusing and recycling waste. Together we can secure a sustainable future for Edmonton.

Thanks and stay safe,

Michael Labrecque



VISION

To be a customer-driven world leader in sustainable and innovative waste management.

Waste Services builds partnerships that contribute to delivering services that are cost effective, environmentally sustainable and customer driven. As leaders in providing waste management solutions, Waste Services will continue to be environmental champions in waste management.

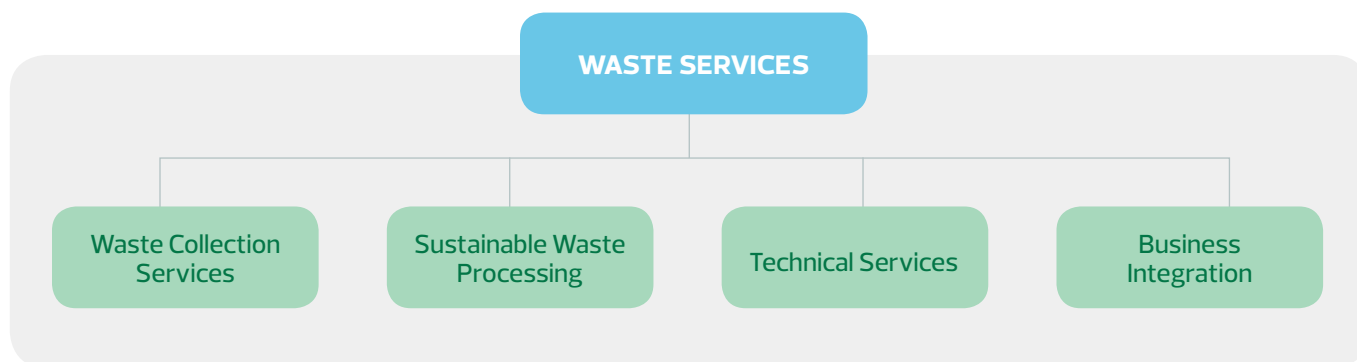
MISSION

To provide waste management services for the City of Edmonton taking into consideration the needs of residents, the preservation of natural resources, the protection of the environment and the financial capabilities of the City.

Waste Services is committed to reducing its environmental footprint through utilizing the best economically and financially available means to manage waste and engage citizens to reduce waste through community outreach. Waste Services provides responsive services by collecting and processing residential and non-residential waste to recover resources and increase landfill diversion rates. These operations are aided by internal and external support services.



ORGANIZATIONAL STRUCTURE



Waste Collection Services

Waste Collection Services responds to the current and changing needs of customers through efficient and effective waste collection and drop-off services. The Collection Services section provides collection of residential waste and recyclables for single unit and multi-unit homes by both City of Edmonton staff and contracted services. Additionally, Collection Services offers non-residential customers optional collection and processing services. These services include:

- Collection of residential waste and recyclables from approximately 398,000 single unit and multi-unit homes;
- Collection of waste and recyclables from City facilities;
- 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 (two have large item Reuse Areas);
- 23 Community Recycling Depots accessible 24/7 offering convenient drop-off locations for residents and small businesses;
- 12 two-day 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 (EWMC) 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 EWMC 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 EWMC is implementing waste processing technologies (e.g. Anaerobic Digestion Facility) in order to recover more from the organics stream.

Facilities and operations at the EWMC are either owned and operated by the City or through contract. For example, Quality One (under contract to the City of Edmonton) works with disadvantaged people. Quality One staff separate residential waste and construction and demolition waste into different streams for further processing and diversion. Together, Waste Services and Quality One have created a supportive workplace where people feel respected as they learn what is expected of them as employees, develop skills and gain financial stability through year-round employment.

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.

A major responsibility of Technical Services is to manage permits and regulatory compliance, oversee research and development, engineering innovations and geographic information systems such as collection routes optimization, in-house laboratory services, leachate treatment plant, Clover Bar Landfill closure and post closure operations, and the Advanced Energy Research Facility (AERF). Technical Services also acts as a liaison for Waste Services with stakeholders such as Alberta Innovates, Alberta Environment and Parks, Environment Canada, the University of Alberta, EPCOR, Capital Power and Enerkem.

Business Integration

Business Integration is responsible for defining Branch 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, business case development, utility rate filing and billing and Branch safety training.

Additionally, Business Integration is responsible for the Branch's communications, social marketing, education and volunteer programs that keep residents of Edmonton engaged in sustainable waste management practices. Each year, more than 500 volunteers provide close to 7,000 hours of support to the Branch. Participation rates in curbside recycling, backyard composting, grasscycling and other activities are monitored to maintain high levels of commitment in voluntary waste reduction.



STRATEGY, ALIGNMENT AND CULTURE

Corporate Alignment

In June 2018, City Council approved the foundational components of Edmonton's most important guiding document: Council's 2019–2028 Strategic Plan. The approved components include an aspirational vision for Edmonton in 2050, a 10-year principle that guides decisions for the term of the plan and four 10-year strategic goals to facilitate progress toward the vision.

Four strategic goals emerged as Council's priorities following extensive public engagement. Edmontonians want to identify Edmonton as a healthy city focused on community and personal wellness. They want to support a City that believes in vibrant and densely populated urban places and see enhanced regional prosperity both at the local and global level. Finally, they believe in climate resilience that safeguards our air and water while striving to minimize our negative contribution to climate change.

Waste Services is committed to advancing Council's vision and goals. Council's Strategic Plan and the Corporate Business Plan will provide a blueprint to coordinate activities and efforts between the goals and within the corporation to make an impact towards achieving the vision. As these are developed, Waste Services will work collaboratively to ensure the strategic direction of the Branch is in alignment with that of the department, corporation, Council and citizens.

Coordination of the strategic work is being done through the Executive Leadership Team which has established additional levels of oversight and management of the strategic work, both to provide the resources needed given the potential scope of revision to the system, and secondly to ensure that oversight and integration between Waste Services with Council's strategic plan, corporate plan and business plan are optimal.

Similar to other large-scale city projects like Blatchford and the LRT, a Waste Governance Committee made up of cross-departmental representatives has been put in place to ensure that the plan is executed effectively.

Department Alignment

City Operations has identified four strategic focus areas to advance business performance across the department: the customer experience, operations, employees and business innovation. The initiatives Waste Services will undertake over the next four years align with the department's strategic direction and advance Waste Services business in these areas.

In addition, new key performance indicators have been established within a Performance Management Framework. The Framework establishes measures, monitoring and reporting structures, informs performance targets and aims to improve Branch decisions and inform strategy.

Waste Services Key Performance Indicators

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 ¹	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
Financial Accountability	Annual Net Income	10,775	19,564	13,207	8,709	5,952	6,592
	Stable Rates	4.4%	2.3%	2.5%	2.5%	2.5%	2.5%
	Debt to Net Assets Ratio	82%	81%	76%	77%	78%	79%
	Cash Position	44,155	59,026	39,342	31,700	16,087	14,634
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



Cultural Alignment

Our employees are our most valuable asset and our citizens are the key to helping shape the City's protection of the environment and health of the population. Waste Services is focused on demonstrating the City's cultural commitments to our employees, Council and Edmontonians. Waste Services is committed to being:

Safe

We value respect and protect the physical, mental and emotional wellbeing of each other and those we serve. Safety is everyone's responsibility. We create trusted spaces to challenge the status quo and do our best work. Mutual respect, courtesy and care for each other are fundamental no matter what position we hold.

Helpful

We care about people's experiences. We work with them and for them to seize opportunities, address challenges and deliver outstanding service. We view public service as an honour. We are driven by, and respond to, the interests of those we serve. We seek to understand the experience of those we serve to better meet their priorities and expectations.

Accountable

We are trusted and empowered to embrace our responsibility for our actions, decisions and behaviours. We commit to our responsibilities to Council, each other and those we serve. We understand the corporation's goals and our work aligns and supports them. We are responsible for meeting performance expectations and results. We live our cultural commitments with respect, integrity and transparency.

Integrated

We get the best results when we align our diverse ideas, knowledge and efforts in shared purpose. We believe the whole is stronger when its parts are aligned. We work in common cause and not as an assembly of stand-alone functions. We are all connected in working to achieve the success of our City, both across the corporation and with our external stakeholders. We respect and value diversity within our workplace and across the communities we serve.

Excellent

We perform to the highest standard. We passionately pursue innovation and continuously improve ourselves, our teams and our City. We create an environment that encourages, values and recognizes continuous improvement and innovation. We commit to quality, ingenuity and high performance in all that we do. We seek continuous improvement and innovation. We seek continuous improvement through curiosity, and being well informed about new ideas and opportunities.





TRANSITIONING INTO THE FUTURE

A Brief Look Back


Since approval of the Waste Strategy in the early 1990s, the EWMC has been expanding its operations to include a unique collection of advanced waste processing and research facilities. With the goal of maximizing waste diversion, major waste processing facilities were commissioned including the Materials Recovery Facility (sorting of recyclables), the Edmonton Composting Facility and the Construction and Demolition Recycling Facility. Infrastructure to support these, and other waste management services and programs, were added. This includes the Integrated Processing and Transfer Facility and the Advanced Energy Research Facility. The Waste to Biofuels Facility and the Anaerobic Digestion Facility, when it becomes operational, will contribute to increased waste diversion from landfill.

The goal of diverting 90 percent of residential waste from landfill has been endorsed in City policy and in the City of Edmonton's overall Environmental Strategic Plan. Waste Services is continuously striving to meet this goal, while providing the best possible services to the citizens of Edmonton. There is a significant gap between current system performance on diversion and the stated goal. As such, Waste Services is now in a period of transition and is adjusting its programs and services to refocus on achieving their overall goals.

In June 2018, Council approved components of Council's Strategic Plan 2019–2028. These included an aspirational vision for Edmonton in 2050, a 10-year principle that is the lens to guide decision-making for the term of the plan and four 10-year strategic goals to facilitate progress towards the vision.

In alignment with Council's Strategic Plan, Waste Services, during the next four years, will review current processes, programs and services, engage residents, customers and stakeholders, maximize operational efficiencies, refine asset management processes and ensure fiscal sustainability for future years. This strategic project will re-assess the current Waste Management Strategy and recommend a path that will ensure diversion goals are achievable across all streams of waste: single unit residential, multi-unit residential and non-regulated (Industrial, Commercial and Institutional).

Some of the strategic and operational shifts related to this strategy will take place during the course of this business plan. For example, changes to single unit residential collections are anticipated if a new Source Separated Organics (SSO) program is brought on stream. As programs are implemented, Waste Services will adapt programs and performance measures. New measures will be brought on stream and new targets set as required.



The overall Waste Management Strategy Update has a 25-year timeline. Its scope was set in March 2018 and is in alignment with the January 2018 audit and a recent program and service review of Waste Services' non-regulated programs. Waste Services' overall strategic recommendations will be presented to Utility Committee in June 2019, with planned bylaw changes for fall 2019. In addition to changes to residential collection (outlined below), Waste Services is also investigating strategic approaches to the following initiatives:

- Potential implications of adopting the goal of being a “zero waste” city.
- Extension of broader waste diversion strategies into the multi-unit sector including targeted communication and education programs.
- Increasing waste diversion in the non-residential sector and determining the most appropriate strategic path for the City to impact this sector.
Implementing additional waste prevention and reduction initiatives (including potential programs to ban single-use plastics and to reduce food waste across all sectors).
- Collaborating with regional partners.
- Aligning with the City's broader sustainability targets.

Proposed Changes to Organics Management Program

The Waste Strategy Update presented to Council on March 20, 2018, recommended several program changes pertaining to the management of organic waste required to progress toward the goal of diverting 90 percent of single unit residential waste from landfill. Given organic material makes up a large portion (more than 50 percent) of the residential waste stream, it is the focus of upcoming changes to waste services. These proposed programs include:

- **Source Separated Organics (SSO)** – SSO is a system where compostable material, such as food waste, is separated and set out for collection by the homeowner separately from garbage. The source separated organic material is then processed into compost and redistributed for beneficial use. This program is anticipated to increase residential waste diversion from landfill by increasing the effectiveness of the organic waste materials process, thereby reducing the amount of organics being landfilled.

- **Grass Clippings, Leaf and Yard Waste** – During summer months, the average Edmonton household waste contains approximately 50 percent grass clippings for a total estimated 50,000 tonnes city-wide. Encouraging grass and yard waste reduction at the home results in a higher waste diversion rate, less greenhouse gas from vehicle emissions, less landfill gas emissions and it ensures the overall waste stream has less moisture. As one of the proposed program changes, grass, leaf and yard waste will no longer be part of regularly scheduled waste collection. Instead, leaf and yard waste will be collected seasonally in the spring and fall or can be dropped off at Eco Stations or Big Bin Events.

The City of Edmonton has promoted “Go Bagless” (grasscycling) to residents in a voluntary capacity since 2011. Public education and promotional efforts have gained significant attention with 58 percent of households with a lawn surveyed (2017) reporting that they leave their grass clippings on the lawn all or most of the time.

- **Enhanced Waste Reduction Efforts** – Waste Services will continue to encourage waste reduction by focusing on strategies that residents can implement in their homes, such as food waste prevention, along with supporting and promoting more expansive initiatives such as extended producer responsibility.

Extended Producer Responsibility (EPR) holds the producer of material responsible for their product's life up to and including the post-consumer stage. Most provinces (except Alberta) have adopted EPR as policy and as a regulatory instrument. Waste Services continues to research this topic and will maintain efforts to coordinate with other Alberta municipalities, such as Calgary, to encourage legislation of EPR in Alberta.

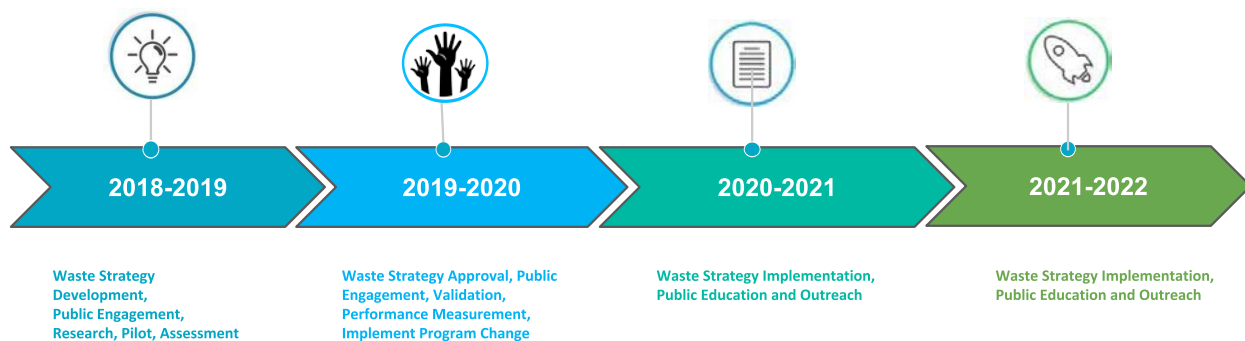
All of these programs represent significant changes for Edmonton residents and it will take time and significant, ongoing education and public engagement to both shape and ensure the successful adoption of new practices. See figure on the next page for what residents currently receive for their monthly rate.





THE FUTURE OF WASTE 2018–2020

Waste Services is proposing a number of changes to current programs and services during the business planning period. Below is an overview of how Waste Services will proceed over the next 18 months.



2018–2019 Engage and Research

Waste Strategy Development

In collaboration with Utility Committee, City Council and using information from public engagement efforts, Waste Services will develop a 25-year Waste Strategy. Administration presented a Waste Management Strategy Update to Utility Committee on February 23, 2018 recommending program changes that would better align the City with the goal of diverting 90 percent of residential waste from landfill.

Public Engagement

As part of the overall strategy, distinct engagement approaches will be carried out for single unit households, multi-unit residences and non-residential stakeholders including the Industrial, Commercial and Institutional (ICI) sector.

Questions for public engagement will focus on the collection and beneficial processing of waste, consistent with broad-based source separated organic oriented programming.

In addition, public engagement will consider:

- Goal setting and whether Edmonton should embrace a zero-waste target.
- Potential waste reduction activities including initiatives to reduce food waste, regulating single-use plastics, and a range of other potential waste reduction initiatives which could impact both residential and non-residential sectors.

Research

In partnership with associations and waste management industry experts, Waste Services is gathering information on best practises in order to facilitate development of the Waste Strategy. Research into food waste prevention will be launched. Potential implications of adopting the corporate goal of being a “zero waste” city will also be researched in collaboration with departmental representatives.

Source Separated Organics Pilot

The Source Separated Organics (SSO) Pilot, in tandem with changes to curbside collection of grass, leaf and yard waste, will improve compost quality, decrease infrastructure and operating costs and is estimated to improve the single unit residential diversion rate by 11 percent (four percent for grass, leaf and yard waste and seven percent for source separated organics).

The first phase of public engagement will be conducted with residents in fall 2018 based on the four options presented for the pilot. Administration will return to Utility Committee in February 2019 with the results of the engagement, including a final recommendation of the preferred source separated organics set-out to be included in the testing phase.

Assessment

Waste Services is reviewing all processes, programs and services to maximizing efficiencies. This strategic work will focus on assessing technologies and processes to achieve 90 percent diversion. Additionally, it will focus on how we engage with citizens, effective working relationships with private sector stakeholders, and opportunities to recover, reduce and reuse material from the waste stream.



2019–2020 Validate, Refine, Report

Waste Strategy Approval

In February 2019, Waste Services will return to Utility Committee with a Waste Strategy Update and later that year with proposed bylaw changes. This update will describe results of initiatives undertaken to date. Also, in Q2 2019, Waste Services will provide an update on non-residential business initiatives.

Public Engagement

Public engagement will help to inform and shape the timing and scope of proposed changes to programs and services and will be aligned with overall improvements planned for the EWMC.

The planned public engagement will build upon previous consultation and Council's direction on grass and yard waste, as well as market research conducted in January 2018.

Distinct public engagement approaches will be carried out for single unit households, multi-unit residences and non-residential stakeholders including the Industrial, Commercial and Institutional (ICI) sector.

Validation

The public engagement results for source separated organics will determine how the program will be implemented city-wide. Research findings into food waste prevention may result in addition of this waste reduction element to the Waste Strategy.

Performance Management

New key performance indicators will be established as program changes are implemented. As part of the source separated organics testing phase starting in spring 2019, Waste Services will work with the Business Performance and Customer Experience Branch to conduct customer journey mapping.

Implement Program Change

The full range of bylaw and policy changes required to support the overall Waste Strategy will be presented in June 2019, but not finalized until results of the public hearing in fall 2019 has taken place. The changes to curbside collection of grass clippings from single unit households and the source separated organics test phase are the main service change during this time period.

Waste Services 2020–2022

Waste Services' 25-year Strategy is focused on ensuring the pieces are in place to reach the 90 percent diversion goal. This will include maximizing waste diversion across all waste streams (single unit residential, multi-unit residential and non-regulated). As work toward that goal continues, Utility Committee, Council and citizens will receive updates on the progress and recommendations will be brought forward for consideration.



BUILDING BUSINESS MATURITY

As Waste Services moves forward with the strategic work, the focus will be on approaches to building the Branch's business maturity. Key areas include performance management, diversion calculation methodology, contract management, asset management and capital project prioritization.

Performance Management Framework

As part of the Waste Services Strategy, key performance indicators have been reviewed and revised to align with the new direction. Additionally, processes to regularly measure, monitor and report our progress have been established. The performance management framework will ensure real-time feedback on the efficiency and effectiveness of our strategy and provide leadership with a rigorous tool for evidence-based decision making. The revised key performance indicators will also ensure baseline measures are in place that can be used across the full term of the strategy. A major component of this framework rests on the diversion calculation methodology.

Diversion Calculation Methodology

The key strategic goal for the City of Edmonton's Waste Services is maximizing diversion of single unit residential waste. As processes and technologies change at the EWMC, it is important to verify diversion

metrics to accurately track progress toward a single unit residential diversion rate of 90 percent. Waste Services re-evaluated and refined the diversion rate calculation methodology, as it relates to single unit-residential waste, which enables the Branch to:

- Identify more accurate and verifiable waste quantities;
- Compare residential waste performance year over year; and
- Communicate results of waste diversion programs.

The waste diversion calculation methodology aligns with the residential waste diversion rate calculation methodology outlined in the Residential GAP—Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste System Flow. Waste Services has completed the following:

- Updated assumptions for grasscycling and backyard composting programs based on revised survey results;
- Reconciled the tonnage of waste diverted through waste facilities such as recycling depots and Eco Stations;
- Revised assumptions to more accurately split residential and non-residential waste; and
- Revised assumptions to split single unit and multi-unit residential waste, in line with other municipalities.

Waste Services presented a revised diversion methodology calculation to the Office of the City Auditor. The Auditor's Office determined that the model is reasonable.

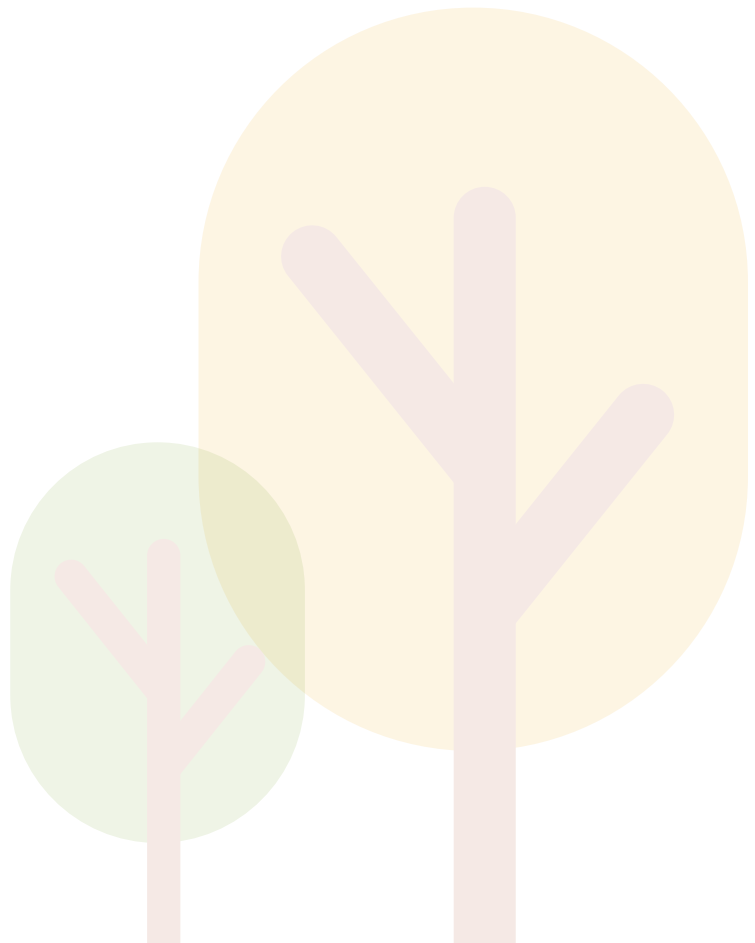


Procedural documents have now been developed to assess the revised assumptions and validate the accuracy of the model.

Diversion targets and calculation methodologies for the multi-unit sector and the non-regulated sector will be developed as part of the strategy development work over the next year.

The figure below shows the potential path to achieving 90 percent single unit residential waste diversion from landfill. This includes the adoption of potential waste services program changes, including the adoption of a source separated organic waste management program, program changes around how we process grass clippings as well as seasonal yard waste, and further potential programs such as implementing volume limits to residual waste set-out and a textile recycling program.

The numbers in the figure below assume maximum diversion through all initiatives. It will take time and extensive, ongoing engagement with residents to adapt to new processes. Operationally, the figures assume the optimal processing of the facilities is realized. Ongoing evaluation and assessment of all processing and collection programs will be required to address any shortfalls.



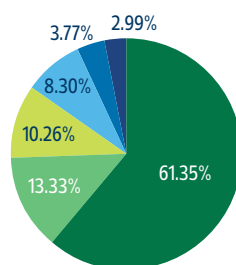


2017 DIVERSION – 39%

CURRENT PROGRAM

Waste programs include:

- Mixed waste stream collection
- Separate recyclables collection
- Waste drop off and recycling programs
- Edmonton Waste Management Centre
- Composting Facility operational partial year



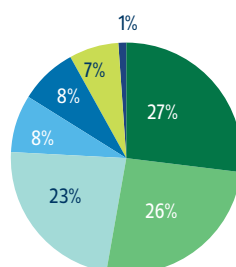
- Residuals
- Organic Waste Management
- Waste Prevention Initiatives**
- Recycling
- Waste Drop Off Program**
- Construction & Demolition Recycling
- Waste to Biofuels

EXPECTED DIVERSION – 73%

FULL OPERATION OF WASTE PROCESSING FACILITIES

Increased single unit diversion due to:

- Full operation of Anaerobic Digestion Facility
- Full operation of Waste-to-Biofuels Facility
- Full operation of Composting Facility



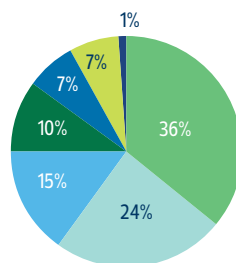
- Residuals
- Organic Waste Management
- Waste Prevention Initiatives**
- Recycling
- Waste Drop Off Program**
- Construction & Demolition Recycling
- Waste to Biofuels

EXPECTED DIVERSION – 90%

WASTE DIVERSION PROGRAMS FULLY IMPLEMENTED

Source separated organics collection:

- Grass, leaf and yard waste program
- Clear bag program for residual waste
- Volume limits for residual waste
- Textile recycling program



- Residuals
- Organic Waste Management
- Waste Prevention Initiatives**
- Recycling
- Waste Drop Off Program**
- Construction & Demolition Recycling
- Waste to Biofuels



Contract Management

Waste Services has approximately 90 active contracts with a total value of \$442 million. To ensure Waste Services is managing obligations in an effective manner, the Branch has repurposed resources to create a Contract Management unit within the Business Integration section. Working closely with relevant Branches across the corporation, such as Corporate Procurement and Supply Services, Law, and Business Performance and Customer Experience, this unit is responsible for contract management compliance, governance, strategy development, planning and risk management.

Asset Management

A significant aspect of a successful waste services operation is being able to provide the proper facilities and resources to carry out the mission. Waste Services has identified an asset management best practice for infrastructure maintenance funding guidelines which has been endorsed by the Office of the City Auditor. These guidelines apply to funding for routine maintenance activities and capital maintenance of waste facilities and infrastructure based on a percentage of the total construction replacement value of those facilities.

The purpose of this directive is to identify the roles, responsibilities and processes to be followed in the collection and processing of the information required to properly manage all Waste Services assets. The result is the Annual Infrastructure Inventory Report, a corporate report intended to capture this information and use it in the asset decision making process.

Capital Project Prioritization

The objective of Waste Services Asset Management work is the development of a concise, yet comprehensive set of integrated management strategies. These include operations, maintenance and capital.

Capital investment is one of the most important decision making processes within Waste Services. To ensure that high-quality decisions result from high-quality capital project development processes coupled with high-quality data, Waste Services has undergone a planned and controlled capital process that reviewed, evaluated and prioritized funding needs for capital acquisitions and projects.

To support this process, Waste Services, working in collaboration with multiple stakeholders, has developed more comprehensive and rigorous business case templates and processes based on the corporate Project Development and Delivery Model (PDDM). This disciplined approach will provide the analysis needed to support decision making in a transparent manner.

Edmonton Composting Facility

In 2017, structural issues were identified in the aeration hall roof of the Edmonton Composting Facility (ECF). As a result, this building has been temporarily closed on a seasonal basis (i.e. during the winter). In August 2017, Waste Services hired a consultant to aid in the development of a long-term strategy for the ECF and they are taking into consideration the current infrastructure and equipment, as well as potential change in demand for organic waste processing related to proposed recommendations to our waste programs. A business case will be delivered to Utility Committee this fall outlining options for the long-term strategy of this facility.



Safety and Risk

Safety

Waste Services is committed to building a workplace focused on safety, leadership and excellence throughout all sections of the Branch. During this time of transition, safety will continue to be a priority and supported by two internal committees and one city-wide committee:

- **Safety Culture Task Force:** A Waste Services employee-driven team made up of representatives from all areas of the Branch. Opportunities to improve the safety of staff and customers along with implementation plans are created throughout the operational areas. The Task Force focuses on building a positive safety culture in Waste Service.
- **Joint Worksite Health and Safety Committee:** Helps to maintain a safe work site by working together to identify and resolve health and safety concerns at the work site and aligning with OH&S regulations. This team focuses on assisting Waste Services Management in the implementation of health and safety policy and programs, promoting employer to worker cooperation on health and safety issues, identifying and evaluating risks and recommending control measures.

- **Mandatory Safety & Environment Training Compliance (MTC)**

Committee: Primarily focuses on developing a sustainable system to ensure City of Edmonton compliance with mandatory OH&S regulations. The MTC brings together representatives from across the corporation to share information and collaborate on a consistent approach to training management. The MTC team is working on completing training matrices, linking training requirements to OH&S legislation and identifying training gaps, especially in high risk Branches with a diverse range of safety sensitive positions, like Waste Services.

The input from these committees will continue to drive important discussions around safety, and these discussions will be used to shape operational-level performance measures as well as ensure the success of future waste programs and services offered to the City of Edmonton.



Risk Identification

The following table identifies the operational risks associated with Waste Services. The Likelihood score is from 1 (rare) to 5 (almost certain). The impact score is from 1 (minor) to 5 (worst case).

Risk	Likelihood (1-5)	Impact (1-5)	Mitigation Strategy	Risk Owner
Safety Managers, Directors, Supervisors and Employees work together in creating a safe and healthy workplace.	2	5	<ul style="list-style-type: none"> Creation of a Waste Services Safety Culture Task Force Extensive front-line engagement and participation Procedural rigor increase (root cause analysis, incident reporting, equipment and safety training) Enhanced management expectations and accountability 	Branch Leadership
Environmental Stewardship Waste Services proactively manages environmental risk.	3	5	<ul style="list-style-type: none"> Asset and Infrastructure Management unit Rigorous inspection of all facilities, infrastructure and mobile equipment Increased monitoring and inspection 	Branch Leadership
Financial Stewardship Waste Services operates efficiently and effectively.	5	2	<ul style="list-style-type: none"> Increased business case rigor Deferral account to manage landfill liability and Edmonton Composting Facility 	Branch Leadership
Cultural Commitment Waste Services creates and maintains high performing teams.	2	4	<ul style="list-style-type: none"> Leadership Staff Engagement (Site Visits, Town Halls) More frequent communications (digital boards, one-on-one's, small group interactions) Ace of Waste Peer-to-Peer recognition program 	Branch Leadership

Emerging Issues

Two emerging issues have been identified in Waste Services: Landfill Liability and Cost of Service Study.

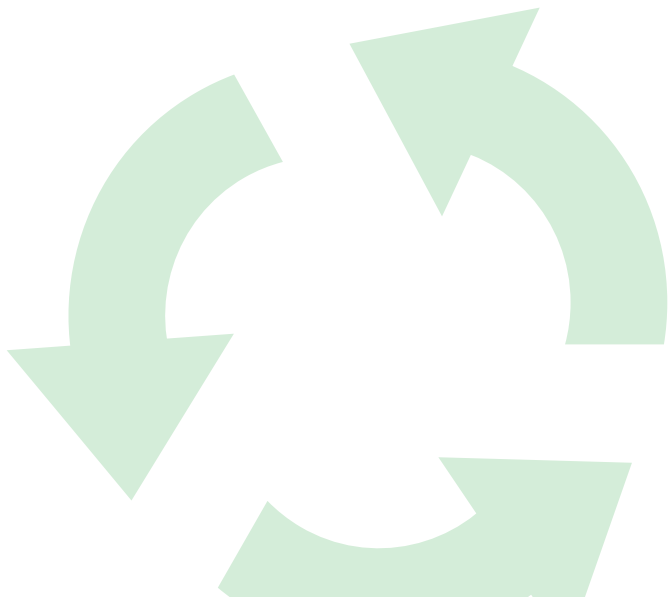
Landfill Liability

During preparation of the final closure plan for the Clover Bar Landfill, high leachate levels were found to be unacceptable for capping purposes. Currently methods of reducing these levels are being investigated, considering modifications to both the collection and treatment systems. The high leachate levels pose a potential risk to slope stability should capping activities begin again. The landfill capping schedule is being re-evaluated based on the time needed to reduce the leachate levels.

Cost of Service Study

As a Utility, Waste Services provides services to multiple customer classes and sectors. These particular customer classes include single unit residential, multi-unit residential and non-residential. These customer classes are further broken down into regulated activities and non-regulated activities. Regulated activities are core services provided by Waste Services, including curbside collection. Non-regulated activities are those that are not essential to the provision of services by Waste Services such as commercial waste collection. It is important for Waste Services to allocate costs appropriately to these customer classes and activities.

In February 2018, the City Auditor highlighted the need to update the current cost allocation measures. Waste Services commissioned a new cost of service study as a response and engaged a third party to conduct the study based on 2017 operational and financial results. This revised model will update the cost allocation between the aforementioned customer classes and activities and will inform utility rates going forward.





FINANCIAL STEWARDSHIP

Reflective of the foundational vision, principles and goals captured in Council's Strategic Plan and those established in the Waste Management Utility Fiscal Policy C558A, the branch continues its commitment to providing stable and consistent rate increases. The Branch continues to strive towards achieving the financial indicators as set out in the Fiscal Policy. Efforts were made to hold rate increases in alignment with the consumer price index, increase operational efficiencies and prioritize capital projects. This Business Plan incorporates the Council approved 2018 Waste Management Rate Filing and 2017 Annual Report results, along with anticipated changes for 2019 to 2022. The resulting rate impacts reflect services and infrastructure required to support Branch initiatives.

Challenges

The Branch focuses on providing stable and consistent rate increases while achieving cash targets and working to achieve debt to net asset targets. Balancing these financial objectives is demonstrated in the Waste Services 2019–2022 Forecast Financial Indicators table. Higher customer counts, increased program revenue in 2017 and a delay in the usage of the Refuse Derived Fuel (RDF) Dryer contributed positively to net income while losses on the disposal of machinery and equipment at the EMMC, and increases to the landfill closure and post-closure liability, decreases net income resulting in a net operating income of nearly \$11 million.

Excess of revenues over expenses and rate increases are required on a go-forward basis to manage the Branch's 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. To provide reduced

rate increases as reflected in this Business Plan, the Branch 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 (PAYG) 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. Regulated services, such as residential collection, recycling depots, waste processing facilities and compost programs are provided to residential customers and are funded by the monthly waste service rate paid by residents.

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 is resulting in the need for additional activities to both reduce leachate levels and bolster existing leachate containment systems. This has resulted in the identification of additional landfill closure liability funding requirements.
- Commissioning of new technology such as the Anaerobic Digestion Facility and the Refuse Derived Fuel Dryer to support waste diversion.
- Introduction of strategic program changes focused on source separation of organics 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 the Utility's debt to net asset position.



- Development of an asset management strategy to ensure infrastructure rehabilitation is prioritized, pursued proactively and funded appropriately.
- Clarification of the policy and financial impacts of non-regulated activities through a review of select programs through the City's Program and Services Review and through the completion of a 2017 Cost of Service Study.

It is anticipated that the Edmonton Composting Facility Aeration Hall Building will be closed either for repair or for replacement in the fall 2019 as a result of the roof failure. A write-down of relevant composting assets is required as the asset no longer contributes to the provision of services. Given the significant financial implications, Waste Services will seek approval to establish a regulatory deferral account, to recover the loss through future rates. The actual and forecast financial results are predicated on this assumption.

Deferral Account Strategy

A deferral, in accrual accounting, is any account where the asset or liability is not realized until a future date (accounting period). The deferred item may be carried, dependent on the type of deferral, as either an asset or a liability.

Waste Services will establish a deferral account to manage the unforeseen Clover Bar Landfill and Edmonton Composting Facility events that have occurred over the past two years to ensure utility rates remain low and stable.

As described in Appendix C: Subsequent Event – Edmonton Composting Facility of the City of Edmonton Waste Services Utility 2018 Utility Rate Filing of October 18, 2017,

“ Given that the financial implications may potentially be significant and are not reasonably quantifiable at this time, the Waste Services Utility recommends establishing a regulatory deferral account to track the immediate and long-term financial impacts associated with this significant event.”

Once the significant event has been addressed, the Waste Services Utility will file the costs captured in the deferral account in a subsequent rate filing. This will allow the Utility Committee to review the prudence of the costs and the recommended treatment to recover these costs through future rates.”

Waste Services has a clear picture of the financial implications of this event and is establishing a deferral account to manage the financial requirements of mitigating this infrastructure gap.

Financial Indicators

Waste Services' financial indicators, as established by Waste Management Fiscal Policy C558A, incorporate the implementation of Branch initiatives in the 2019–2022 business planning period. Initiatives include increasing residential and non-residential waste diversion, encouraging customer program participation and continuously improving the business in a fiscally responsible manner.

The financial indicators are measures of the proposed financial performance of Waste Services. Updated indicators for 2019–2022 are presented below. A full update to the measures will be presented in fall 2018 as part of the 2019–2022 Capital and Operating Budget processes and the 2019 Utility Rate Filing process. These budgets and rate filing documents will continue the focus on achieving overall long-term financial sustainability, balancing both capital and operating requirements with achievement of the financial indicators.

2019–2022 Forecast Financial Indicators

	Actual 2017	Forecast 2018	Forecast			
			2019	2020	2021	2022
1 Rate Sufficient to Meet Expenditures and Cash Flow Net Income	10,775	19,564	13,207	8,709	5,952	6,592
Target: Positive Net Income	Yes	Yes	Yes	Yes	Yes	Yes
2 Cash Position						
Pay As You Go Requirement	5,294	27,195	7,571	11,197	8,328	7,290
Risk Allowance	2,175	3,122	4,866	5,072	5,355	5,437
Target Cash Position	7,469	30,317	12,437	16,269	13,683	12,727
Actual Cash Balance	44,155	59,026	39,342	31,700	16,087	14,634
Actual Cash ≥ Target	Yes	Yes	Yes	Yes	Yes	Yes
Cash Over Target:	36,686	28,709	26,905	15,430	2,404	1,907
3 Residential Customer Rate Impacts						
Single Unit						
Monthly Billing Increase	\$ 1.90	\$ 1.03	\$ 1.16	\$ 1.18	\$ 1.21	\$ 1.24
Impact of Customer Rate	4.4%	2.3%	2.5%	2.5%	2.5%	2.5%
Monthly Unit Rate	\$ 44.90	\$ 45.93	\$ 47.09	\$ 48.27	\$ 49.47	\$ 50.71
Multi Unit						
Monthly Billing Increase	\$ 1.23	\$ 0.67	\$ 0.75	\$ 0.76	\$ 0.78	\$ 0.80
Impact of Customer Rate	4.4%	2.3%	2.5%	2.5%	2.5%	2.5%
Monthly Unit Rate	\$ 29.19	\$ 29.85	\$ 30.61	\$ 31.37	\$ 32.16	\$ 32.96
Target: Stable, consistent rate increases	No	Yes	Yes	Yes	Yes	Yes
4 Financing of Capital Investments						
Debt to Net Assets Ratio	82%	81%	76%	77%	78%	79%
Target: Between 50% - 70%; balancing cash availability, construction inflation, and interest	No	No	No	No	No	No



Rates Sufficient to Meet Expenditures²

From 2014–2017, the Waste Services Utility met the requirement of generating sufficient net income to meet expenditures and cash flow requirements. From 2019 to 2022, the Utility anticipates maintaining positive net income ranging from a high of \$13 million to a low of \$6 million.

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 Fiscal Policy.

In 2017, Waste Services' cash position improved significantly as a result of increases to the landfill closure and post-closure liability, and the transfer of the Bremner Lagoon liability from Drainage Services as part of the transfer to EPCOR. However, the cash for these liabilities is restricted and cannot be used to meet the cash flow requirements of the Utility for either operating or PAYG.

Accounting for the restricted cash within the Utility's current and forecast cash position and for the impacts of the increase to the risk allowance, Waste Services will continue to achieve its targeted cash position throughout the forecast period.

At the time of writing this Business Plan, the Utility has received information in regard to leachate levels and containment at the Clover Bar Landfill that call into question the sufficiency of the closure and post-closure landfill liability. However, while the potential financial impacts of this event may

be significant, they are mostly unknown. Efforts will be placed in the coming months to determine the status of the leachate and quantify the financial cost of remediation. While the Utility may ultimately establish a regulatory deferral account to recover these costs through future rates, the risk allowance has been increased as an interim measure to provide an estimate of future rate impacts.

Stable Consistent Rate Increases

Waste Services is committed to providing stable, consistent rate increases over the next four years and will work collaboratively to ensure the strategic direction is in alignment with that of the corporation. Stable rate increases will be achieved through enhanced oversight and management of operating costs, increases in commercial collections (non-regulated) revenue, higher program revenues and decreased amortization as a result of lower capital expenditures in prior years.

Debt to Net Assets Ratio

At the end of 2017, the Utility's debt to net assets ratio was 82 percent, three percent above the forecast of 79 percent. Increases to the landfill liability and losses on the disposal of machinery and equipment operated by a third party at the EWMC contributed to the increase in the ratio. In the near term, heavy capital investment in new organics processing infrastructure and the introduction of strategic program changes will mitigate significant reductions in the ratio. A long-term strategy to reduce the target debt to net assets ratio to near 70 percent will be included as part of the 2019–2022 Operating and Capital Budget processes and the 2019 utility rate filing process.

² Given the significant financial implications of the rehabilitation or closure of the ECF, the Waste Services Utility will seek approval to establish a regulatory deferral account to recover the loss through future rates. The actual and forecast financial results are predicated on this assumption.



CONCLUSION

Waste Services is advancing its strategic and operational approach to deliver on its commitment to foster a healthy environment, improve fiscal responsibility and reduce the amount of materials that end up in landfill.

Major shifts are underway to engage citizens, implement environmental best practices, maximize operational efficiency through performance

management, increase financial oversight to ensure low, stable rate increases that provide the best value for money and maintain the highest standards of safety.

Waste Services' integrated 25-year Strategic Outlook will ensure Edmontonians receive maximum environmental and economic benefits while minimizing the cost increases of managing solid waste.

APPENDIX A – KEY ASSUMPTIONS

Economic Assumptions

The assumptions used to develop this Business Plan are identified in the following tables as provided by the Corporate Budget Office's Budget Guidelines unless otherwise noted.

Forecast Growth	2019	2020	2021	2022
Population	1.7%	1.9%	2.0%	2.1%
Economic Growth (GDP)	2.7%	2.3%	2.4%	2.5%
Consumer Price Index	1.6%	2.0%	1.9%	1.9%
Housing Starts*	8,844	9,017	9,206	9,401

*Source: Spring 2018 Forecast Key Indicators City of Edmonton prepared by City of Edmonton's Chief Economist.

Cost of Debt

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

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%

