



City Operations

Edmonton

**2021-2024 Waste Services
Business Plan**

Waste Services
edmonton.ca/waste

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INTRODUCTION

Over the next four years, significant changes to the waste management program will be delivered.



The City of Edmonton Waste Services Branch is an essential part of the City Plan. We are passionate about supporting Climate Resilience through innovation and partnership. The goal is to support and encourage City of Edmonton citizens, businesses and institutions while demonstrating shared leadership as stewards of the environment.

Waste Services has developed an integrated 25-year Strategic Outlook to ensure Edmontonians receive maximum environmental benefits while minimizing the cost increases of managing solid waste. The Reimagine Report (July 6, 2020, Office of the City Manager report CR_8379) highlights many challenges that Edmonton expects to face in the coming years related to the COVID-19 pandemic and Waste Services has realigned its strategic deliverables in consideration of these needs. There is potential for increased residential waste as people spend more time at home. COVID-19 has also prompted a resurgence in single-use products, making the task of diverting waste from landfill more challenging. Edmonton's population growth is expected to slow, which could result in a lower than forecasted annual utility rate, and economic pressures will likely result in a lower tolerance for increased waste utility rates to offset further diversion.

Over the next four years, significant changes to the waste management program will be delivered. As part of the transition to a zero waste future, the City will lead by example in implementing source separated organics at City of Edmonton facilities and buildings, setting an example for the Industrial, Commercial and Institutional sector to follow. A new Waste Reduction Roadmap, which will be presented to City Council in 2021, will prioritize new waste prevention and reduction initiatives across all sectors. And within the next four years, new regional partnerships will result in facilities to maximize organic production.

Stable and consistent utility rate increases remain a focus and the 2021-2024 Waste Services Business Plan highlights the service delivery transformations as well as monetization of waste byproducts and assets to continue to

achieve this goal. The Service Delivery Transformation will be delivered through technology, process optimization and reimagined services. It will enhance operational efficiency while enhanced employee engagement and a continued safety culture will improve productivity and retain top talent.

Looking forward, the 2021-2024 Business Plan outlines how Waste Services will continue to make transformational impacts through the 25-year Waste Strategy, and provide essential service to Edmontonians while maintaining full cost recovery, and improve the employee and citizen experience to support adaptation of new systems.

Waste Services Goals 2021-2024

Make Transformational Impacts: Waste Prevention and Residential Diversion

Aligning to the framework of Zero Waste, the Strategy adopts a broader lens to transform the system with new focus on efforts that will emphasize waste prevention in addition to affirming a commitment to diversion of single unit and multi-unit residential waste from landfill.

Manage the Corporation: Consistent and Stable Rate Increases

Maintaining consistent and stable rate increases delivered through service delivery transformations to keep costs low, and innovative monetization of the waste byproducts (like compost and renewable natural gas) and assets to generate revenue.

Deliver Excellent Services: Supporting Transformation

Newly created programming, high-touch digital support for residents and improved customer journeys will provide the customer support required to make successful system adaptations for increased waste prevention and diversion. A continued employee safety and revised workforce training programs will enhance physical and mental well-being, as well as future role readiness.

Guiding Principles

As we progress over the next four years, Waste Services will follow the guiding principles described in the City's Reimagine Plan, ConnectedEdmonton plan, and the new City Plan. In addition, we will:

- Maximize the promotion of policy, regulation, partnerships and market creation over direct practice and market entry for non-regulated business sectors.
- Manage the risk to diversion targets through balanced portfolios of insourced and outsourced activities for regulated business sectors.
- Build citizen behaviour agility to meet evolving system requirements brought about by changes in market availability and the beneficial cost to divert.

Business Plan Overview

The 2021-2024 Business Plan describes Waste Services' planned activities to deliver:

- Single Unit Residential Diversion of 65% by 2023
- City Corporation Waste Transformation
- Roadmap to establish and deliver a Multi-Unit Residential Diversion management plan
- Industrial, Commercial & Institutional Program Sector business plan and strategy
- Continued service delivery transformation, focusing on Reimagined services, Citizen Experience, and Information Technology to deliver low rate increases of 0% and 0.5% in 2021 and 2022, respectively
- Enhanced Asset Optimization and Innovation

Organizational Structure

Alignment with the vision and mission begins with the organizational structure of the branch. Waste Services consists of five sections, each strategically aligned to achieve these goals.

- Waste Collection Services responds to the needs of customers through efficient and effective waste collection and drop-off services.
- Sustainable Waste Processing operates the Edmonton Waste Management Centre with a focus on receiving and sorting residential waste in an effort to recover valuable resources and minimize the amount of waste going to landfill.
- Technical Services is dedicated to the engineering, technical support, asset management, innovation, and environmental compliance of waste processing and collection operations.

- Business Integration is responsible for defining branch strategy, facilitating operational direction, customer experience, resource allocation, financial governance and branch-wide alignment to corporate directives.
- Waste Strategy Implementation focuses on the further development of operational tactics and implementation regarding the 25-year Waste Strategy.

The structure of Waste Services will be influenced by the ongoing Shared Service Review, Enterprise Commons project, and the newly created Service Innovation and Performance Branch. The revised branch structure will take shape over the next two years and will continue to influence Waste Services after completion.

Waste Strategy in Action

Over the next four years, Waste Service will ensure the strategic direction set in 2019 is aligned to the City Plan and Reimagine, the City's strategic response to COVID-19, as Administration navigates the challenges presented in 2020. The plan applies a Zero Waste framework, which emphasizes waste reduction, reuse, recycling/composting, materials recovery and waste-to-energy across all waste streams.

Single Unit Residential Diversion Program

To achieve the City's Single Unit Residential Diversion from landfill goals, Waste Services will need:

1. To prioritize Waste Prevention and Reduction: Citizens reduce overall waste generation
2. Citizen Partnership: Residents are willing to, and educated on, separating waste for disposal
3. Single Unit Four Stream Collection: An opportunity for four stream collection at the curb, as well as alternate disposal at other Waste Services facilities for recyclables
4. An increased ability to fully extract, recycle and reuse the received materials
5. An increase in available markets for collected products

The 2021-2024 Business Plan describes planned activities to deliver 65% Single Unit Residential Diversion by 2023.

1. Prioritizing Waste Prevention & Reduction

*2021-2022 Deliverable:
Create a waste reduction
roadmap created*

Waste reduction efforts are an integral part of the journey to achieving a 90 percent diversion rate from landfill as well as the Zero Waste Framework. Currently in progress, the Waste Reduction Roadmap will identify programs and activities that will result in fewer materials becoming part of the waste stream, from all sectors. Roadmap actions may include operational refinements, incentives, increased engagement and partnership with the community, and increased public education. The Roadmap, to be presented to City Council in 2021, will also align performance targets to desired outcomes and supporting actions for evaluation and continuous improvement in alignment with the City's business planning cycle.

*Re-examining Single Use
Items*

The development of the roadmap will also re-evaluate the best course of action to limit single-use items with consideration for new demands and challenges related to the impact of COVID-19. Recognizing that COVID-19 has resulted in a resurgence of single-use waste including personal protective equipment (gloves, masks and wipes), packaging from online shopping, single-use items from take-out-food delivery (cutlery, dishes and packaging), and retailers reverting to single-use plastic bags, additional research and engagement will identify steps to reduce the distribution and consumption of single-use items, which may include the introduction of a bylaw to ban certain single-use items.

Home Composting

*2021-2022 Deliverable:
Develop long-term plans for
Home Compost and Master
Composter Recycler
Programs*

Waste Services continues to help residents start composting at home and support people who already do. Education and outreach shares a range of compost methods for all lifestyles, from compost bins to grasscycling, and more. The team will develop a long-term plan for home composting, which will refresh the interpretive site about home composting, support community composting, and expand volunteer opportunities.

2. Citizen Partnership

*2021-2022 Deliverable:
Digital citizen
communication
implemented*

In 2018, the citizen engagement shows Edmontonians support increased waste sorting. The current pilot of 8,000 homes has provided valuable insight for the larger citywide roll out.

Education and outreach to residential customers will greatly impact the success of the cart rollout project and promote ongoing agility in residents adapting to changes in sorting. COVID-19 has changed how citizen engagement will occur and a move towards increased self-service delivery

models to improve Edmontonians digital interaction with Waste Services is underway. We are exploring additional services such as two-way communication between citizens and collectors and visibility into collector locations will increase citizen readiness. Requests for cart exchange, billing changes, and additional services will also be integrated digitally to improve administration effectiveness.

Residents will be intentionally guided to the four Eco Stations as outlets for their excess waste.

3. Single Unit Four-Stream Collection

2021-2022 Deliverable: Implement cart-based curbside collection supported by citizen education.

Approximately 250,000 households in the City of Edmonton will move to a four stream collection program starting in 2021. This program will introduce a separate food scraps, seasonal yard waste collection, and volume controlled waste to its existing blue bag recycling program. Waste from these households make up approximately 67 percent of the City's residential waste, or roughly 205,000 tonnes. Over the next four years, food scraps diversion, waste reduction, and additional recycling captured from these households is expected to contribute 7 per cent to the amount of single unit residential waste diverted from landfill.

To implement four stream collection, residents will receive garbage (black) and food scraps (green) carts. Effective set-out will be the first goals of this program. Over the next four years, as Edmontonians become familiar with sorting and setting-out waste, a greater emphasis will be placed on ensuring proper waste sorting to further increase diversion success. Changes in the curbside diversion rate will reflect resident's four stream sorting behaviour at the curb.

4. Processing to support Single Unit Diversion Goals

2021-2022 Deliverable: Implement cart-based curbside collection supported by citizen education.

We are working with regional partners to ensure adequate organic processing capacity. A project to allow for refuse-derived fuel (RDF) to be removed from the facility, as outlined in the April 13, 2020 City Operations report CR_8072, will positively impact the single unit residential waste diversion rate by allowing RDF to be transported in different ways on and off site, furthering the waste-to-energy goal.

An upgrade and retrofit to the Materials Recycling Facility (March 22, 2019 City Operation report CR_6866) will focus on replacement of end-of-life-cycle

equipment and enhancements to the fibre (paper/cardboard) line with optical sorter to improve the marketability potential with quality products.

Material Reuse (post-recovery, pre-recycle)

2021-2022 Deliverable: Reuse Roadmap crafted in conjunction with Waste Prevention; partnerships and programs piloted.

There are significant opportunities to expand the reuse component of waste education programming. In the Reimagine planning we have developed a hybrid approach to programming including in person and virtual programs, as well as developing new programs that address missed demographics such as adults and seniors. Creating partnerships with local organizations and individuals and expanding the scope of reuse fairs will allow us to highlight the variety of ways that reuse can be accomplished such as by promoting share and second hand economies. Partnerships will also provide an alternate source for materials used in creative upcycle programming.

5. Market Identification for Recyclables and Feedstock

2021-2022 Deliverable: Deliver roadmap for market creation and key partnerships for current and envisioned products

In support of diversion efforts, consumers for diverted product output (in original or modified form) must be found and available to handle City volumes. A roadmap will ensure current outputs such as renewable natural gas (RNG), recyclable recoveries, RDF, recycled aggregate products, and multiple grades of compost will be taken to market with a focused intent of inventory turnover, cost recovery and profitability. Local markets will be the priority point of focus and constant market scans and industry involvement will allow Waste Services to build partnerships in support of diversion efforts.

2021-2022 Deliverable: Three stream waste separation program in all City controlled facilities and parks

City Corporation Waste Transformation - Leading by Example

The City will be transitioning approximately 200 City-owned and operated municipal facilities and 40 major and district parks sites to the new three stream waste separation program by the end of 2021.

Additional Sector Waste Programs

Implementing the Single Unit Waste Prevention and Diversion program will be the focus for 2021. As these programs become active, the focus will also include implementing and influencing programs in the multi-unit and Industrial, Commercial and Institutional (ICI) sectors.

Multi-unit Sector

Implementing a source separated organics approach and improving material recycling in the multi-unit sector requires overcoming specific infrastructure

Organics and Recycling Capture from Multi-unit Dwellings

*2021-2022 Deliverable:
Three year multi-unit
roadmap and adaptive
management plan*

and educational challenges. As implementation of the City Plan progresses, and increased infill and multi-unit buildings occupy smaller areas, the processes and equipment supporting collection might also have to adapt. Additionally, high residential turnover requires an extensive education and support program. The development of a robust business case to inform direction in this sector is underway. To be delivered in 2021, this business case will lay out the roadmap the City of Edmonton must take to increase diversion success in this sector and will be presented in 2021.

**Multi-Unit Recycling and
Waste Feedstock Processing**

*2021-2022 Deliverable:
Roadmap established to
meet 2023+ needs*

As the multi-unit plans are completed, Waste Services will need to consider its ability to process the additional waste separated and captured, with the goal of diverting it from landfill. Over the next four years, Waste Services will apply the experience gained in the various forms of waste management, under the Reimagine framework, to establish a capital, relationship and market roadmap to meet the remaining diversion goals.

Industrial, Commercial & Institutional Program Sector

*2021-2022 Deliverable:
Three year ICI sector
roadmap and adaptive
management plan*

Similar to the multi-unit program, the City is currently investigating options to increase waste diversion in the ICI sector. Development of both a strategy and business case is underway to determine how the City will tackle waste in this sector. Unlike the multi-unit program, the ICI sector is largely non-regulated by Waste Services, and the City's role will be to influence this sector through incentives, policy and regulation. Given the expected slow recovery phase from COVID-19, as well as the potential decline in the appetite for climate change investment, Waste Services is balancing the imperative to reduce ICI waste with sensitivity to the ability of this sector to bear the potential burden of regulation.

*2021-2022 Deliverable:
Ongoing refinement of the
mass balance*

Current Mass Balance Model

Waste Services maintains a living model of residential waste generation that provides robust forecasts for waste separation. This model is updated on a continual basis with regards to changing environmental circumstances and program changes. The model is integral to business planning as well as Waste Services' 10-year capital plan, and aims to inform appropriate waste processing capacity in response to waste generation.

Service Delivery Transformation

Reimagined Services

*2021-2022 Deliverable:
Consolidation of Services
into Central Locations,
Optimize Service Usage,
Modify Service Offering*

The City of Edmonton has committed to a high level plan of action to relaunch and reimagine services in the post-pandemic world. Waste Services will align with the recommendations in this report and will participate in an expedited and enhanced program and service review, as well as an enhanced prioritization budgeting exercise.

Citizen Experience Transformation

*2021-2022 Deliverable:
implementation of
customer journey and
English Language Learners
into Waste Services*

The 25-year Waste Strategy structures program implementation to provide the customer support required to make system adaptations. The newly created Customer Experience team will drive transformation to successfully move the Waste Services branch from a process and cost driven decision-making culture to a customer-centric model. Over the next four years, the team will set a path where proven methodologies and industry-leading practices such as customer journey mapping, customer feedback management, citizen engagement, business performance metrics, and full service and product lifecycle management will be utilized and become normal ongoing improvement activities. Guided by the Corporate Promise and ConnectedEdmonton work, these transformation activities will roll out across the Waste Services branch, aligning all levels and sections of the branch towards a consistent experience at any and all customer interactions points.

Information Technology Transformation

*2021-2022 Deliverable:
Establish Waste Service
dashboard and community
of practice*

To ensure optimized climate resilience while delivering on rate payer value, Waste Services relies on timely and accurate data to identify new service and program needs, as well as integrated and robust technology to deliver on these needs. The creation of a Waste Services Business Technology Governance committee will ensure a balanced mix of business technology investments (data and technology) aligned with the business objectives and the broader Enterprise Commons project. The desired future state ensures the on-demand availability of accurate data and the ability for all users to act upon it not only for reporting (business intelligence) but also for critical business insights (analytics) through a branch-specific portal.

Innovation and Asset Optimization

Asset Management Enhancement

*2021-2022 Deliverable:
Develop asset management strategy and adaptive management plans*

The Edmonton Waste Management Centre (EWMC) is a unique collection of waste processing and research facilities where waste is transformed into useful resources. The size and scope of the EWMC is unique among Canadian municipalities. Legacy, current capital investments, as well as available space and access to waste byproducts, make it a valuable asset.

An Asset Management team has been created with specific responsibility for life cycle management of waste processing facilities and infrastructure assets. The team is developing an asset management strategy to guide activities to maximize asset service life, while minimizing the life cycle cost. The team will ensure that all activities align with the City's approved 10-year Capital Investment Outlook.

Advanced Energy Research Facility

*2021-2022 Deliverable:
Finalize contract with industrial partner for full utilization of AERF capacity and cost recovery*

The Advanced Energy Research Facility (AERF) is recognized as a world class center of excellence that offers plug-and-play capability for numerous sustainable technologies in the research or demonstration/pilot phase of development. It can accelerate the commercialization of such technologies in Alberta. The AERF is working towards a license and partnership agreement with a major industrial partner. Over the next four years, the AERF will continue to drive innovation in bioenergy and renewable resource areas with the objective of fully recovering costs.

Alberta Clean Energy Technology Accelerator (ACETA)

*2021-2022 Deliverable:
Complete design and construction to prepare Site 440 for leasing and operation*

The Alberta Clean Energy Technology Accelerator (ACETA) is a clean energy technology capacity building initiative that began in March 2019. Its purpose is to provide a cost-recovered platform to pilot and upscale innovation in converting biomass, waste biogas, and natural gas into biofuel and other marketable products, and to create successful commercialization of these new value-added products. Over the next four years, this initiative will advance how Waste Services can improve processing, handling and supply of waste feedstock for the RDF process, as well as creating a research hub that will occupy a portion of Site 440 at the EWMC.

Clover Bar Landfill Gas Management

*2021-2022 Deliverable:
Roadmap and approval to proceed*

Landfill gas can be turned to renewable natural gas and the generated green energy can qualify for greenhouse gas offset credits. Both resources can be sold to generate revenue for Waste Services. With Edmontonians' best interest in mind, Waste Services is evaluating partnership options and developing a business case to meet Emissions Reduction Alberta's (ERA) grant specifications (up to \$10-million) to aid in the collection of landfill gas system upgrades, and build a processing facility.

Environmental Responsibility *2021-2022 Deliverable: Functional Groundwater Diversion System*

In addition to actively managing landfill closure activities and routine monitoring, the groundwater diversion system (GWDS) at the EWMC is currently being replaced. This project is expected to be completed in 2021 and will improve Waste Services' environmental performance by effectively diverting groundwater around the Clover Bar Landfill.

Waste-to-Energy Trial

*2021-2022 Deliverables:
Provide land, utilities and support to St. Albert*

The City of St Albert is taking the lead on a waste-to-energy pilot project hosted at the EWMC. The purpose of the project is to study how collected waste from a mid-sized municipality might become a component of a revenue stream that brings better value to citizens than their current waste management practices. The EWMC is ideally suited to host the project and is providing support in the form of land, access to utilities and other contributions-in-kind. The results of the pilot project will be shared with Edmonton and other supporting municipalities. The program is expected to be complete in 2022.

Fiscal Accountability

Economic Pressures

Edmonton's population growth is expected to slow from 2.8% in 2016 to under 2% annually between 2020 and 2022.

The Reimagine Report (July 6, 2020, Office of the City Manager report CR_8379) highlights many challenges that Edmonton expects to face in the coming years related to the COVID-19 pandemic. Edmonton's population growth is expected to slow from 2.8% in 2016 to under 2% annually between 2020 and 2022. This lower population projection, combined with reduced consumer confidence and growing price sensitivity, is anticipated to reduce 2020 housing starts by 30%, which could result in annual utility rate revenue being up to \$500,000 lower than the current forecast. The City expects a reduced tolerance for Waste Utility rate increases as households experience financial strain. Lower levels of economic activity will reduce and/or slow the growth of revenues from Eco Stations, the Material Recovery Facility, and

commercial self haul. Moving forward, the City operates in a new fiscal reality, which will result in significant gaps between providing expected service levels and the availability of financial resources.

Financial Stability

The branch has focused on operational efficiencies and managing within existing staff complements. Appendix 2 details the programs and services that are provided to single unit residents based on the monthly rate (as of 2020)

Waste Services continues to strive towards achieving the financial indicators as set out in Waste Management Utility Fiscal Policy C558A. The branch focuses on providing stable and consistent rate increases while achieving cash targets and working to achieve debt-to-net asset targets to ensure the Utility is financially sustainable over the long-term.

Net income and rate increases are required on a go-forward basis to manage the Utility'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 rollout of strategic program changes.

Key to Waste Services overall financial success is the management of non-rate and commercial revenues as several programs including Construction and Demolition Recycling (C&D), commercial collections, and biosolids undergo substantial changes. Also facing pressure is revenue from the Materials Recovery Facility as the industry responds to global economic forces. Waste Services' ongoing focus on expense management will help mitigate the impact of these revenue risks.

Fiscal Policy Update

Waste Services aims to present a recommended update to the policy during the 2021 Rate Filing

The Waste Management Utility Fiscal Policy C558A was adopted by City council September 23, 2014. This policy guides the financial management of the Utility. Waste Services is working with a third party consultant to review and update the Utility Fiscal Policy, and is concluding a benchmarking study of comparable utilities.

Fiscal Management

The wind-down of commercial collection is underway and is expected to be completed by the end of 2021. The total customer impact is approximately 55 major accounts with long term contracts, 60 clients with one year contracts, and 900 month-to-month clients. During the wind-down, a small segment of mixed use sites (residential and commercial) were identified and a go forward

Commercial Collection Wind-Down

2021-2022 Deliverable: Commercial wind-down complete

plan will be developed. From there, the ICI strategy will inform regulatory program changes to help guide businesses that still require commercial collection service.

Risks and Mitigations

*2021-2022 Deliverable:
Monitor branch-level risks and continue to update Risk Register. Review mitigations to ensure effectiveness*

Several emerging risks have been identified for the 2021 to 2024 timeframe. Waste Services has conducted a thorough risk assessment for each of these risk areas, accounting for both short-term and long-term operational, capital and financial impacts that may occur. Mitigation strategies are developed for each area to minimize risk to the Utility and to the rate payer. An overview of the identified high-level risks is included in Attachment 3.

Enterprise Performance Metrics

*2021-2022 Deliverable:
Finalize EPM measures for all of Waste Services; establish participation and diversion rates for all sectors; create calculated GHG reduction goal; establish benchmarking schedule*

Using the Modern Municipal Reference Model in conjunction with the Enterprise Performance Management (EPM) initiative, Waste Services continues to refine its suite of performance metrics to aid in the management of the business. These metrics provide a balanced focus on customer experience, internal operations and external interactions, and act as guideposts to adjust behaviours and investments.

Additionally, measures to monitor the climate impact of the 25-year Waste Strategy will be developed, including participation, diversion rates for all sectors, and a calculated greenhouse gas (GHG) reduction in line with the City's goal of decreasing its carbon footprint. These targets, based on a carbon budget, allows Edmonton to respond to the urgency for change. Automation of waste collection and reporting of key metrics will further support data-based decisioning.

Key Performance Metrics

GOAL	PERFORMANCE MEASURE	ACTUALS	TARGETS			
		2019	2020	2021	2022	2023
Customer Excellence	Curbside Diversion Rate (Weight Based)*	13%	13%	37%	65%	67%
	Number of Missed Collections per 10,000	2	2	2	2	2
	Measure of Waste Reduction	To be presented with the Waste Reduction Roadmap in Q2 2021				
Operational Excellence	Single Unit Residential Diversion Rate	23% **	17% ****	40%	60%	65%
	Year-Over-Year Change in Collection Cost (City Crews)	3%	-2%	-1%	-2%	-2%
	Average Processing Cost per Tonne****	\$230	\$263	\$294	\$304	\$315
	Number of Reportable Environmental Incidents	20	<20	<20	<20	<20
Financial Accountability	Annual Net Income (\$000s)	Did not meet	Meet	Meet	Meet	Meet
	Stable Rates	2.5%	0.3%	0.0%	0.5%	2%
	Debt to Net Assets Ratio	Did not meet	Does not meet	Does not meet	Does not meet	Does not meet
	Cash Position (\$000s)	Meet	Meet	Meet	Meet	Meet
Organizational Excellence	Employee Satisfaction Rate (Glnt Survey)+	69	71	72	73	73
	Resignation Rate (Trailing 12 Months)	3.64%	<5.0%	<5.0%	<5.0%	<5.0%

	Lost Time Frequency Rate (Trailing 12 Months)	3.23	<3.75	<3.75	<3.75	<3.75
	Adherence to Legislative Preventative Maintenance Schedule	N/A	100%	100%	100%	100%

*Curbside Diversion Rate focuses on changing customer behaviour. This metric measures the percent of the total waste collected from residential curbside customers, which is diverted from black bag waste (either to recycling, organics or grass recycling). The formula for this metric is $(\text{Tonnes Residential Organics} + \text{Recyclables Collected}) / (\text{Tonnes Residential Garbage} + \text{Recyclables} + \text{Organics Collected}) \times 100\%$

**Single Unit Residential Diversion Rate measures the ability to maximize extraction and processing of reusable products (post collection), reducing the overall amount of Single Unit Residential Waste waste going to landfill. It was corrected from 21% to 23% since last reported.

***2020 Single Unit Residential Diversion Rate target has been restated based on current operations in Waste Services. Due to the COVID-19 pandemic, Curbside Rollout implementation was deferred to 2021, as outlined in CR_8258. This delay is source separation at the source pushed back the diversion goals of Waste Services. Additionally, organic waste processing has been paused due to the deconstruction of Aeration Hall at the Edmonton Composting Facility, RDF projection has been minimized related to operational status of the Waste to Energy facility, and the sorting and diversion activities related to blue bag processing have experience interruptions due to unexpected downtime at the Material Recovery Facility.

**** Cost per tonne of EWMC operation is expected to increase over the business planning cycle. Current operations reflect a lower cost operational model related to landfilling of residential waste. As waste processing and diversion facilities come on stream, residential tonnage will shift to the more expensive operation. Once all waste processing and diversion facilities are operational, this metric is expected to stabilize. Additional fluctuations are captured in the target as well due to the upgrade of facilities in the next 4 years.

+Survey method changed in 2019 from a comprehensive two year survey to a quarterly survey. Survey results and targets reflect average GLINT survey results of Employee Satisfaction (eSat) measure. The formula for this metric is: $\text{Sum of } [(\% \text{ weight of each Quarter's participation rate}) \times \text{respective Quarter's Glint Survey Result}]$

For 2019, Employee Satisfaction Rate presented is the 2019 Q4 result (due to timing of survey change). Participation rate for the 2019 Q4 survey was 46%.

Appendix One: Capital Plan

Waste Services has an ongoing capital program to ensure sustainability and growth in branch assets, and meet the regulatory requirements through proper program planning and delivery. In an effort of continuous improvement and response to audit recommendations, significant improvements have been made in the capital program in the past few years.

Aligned with the City's Project Development and Delivery Model (PDDM), a comprehensive branch program and project management process was developed and is utilized from project initiation, justification (business case development), prioritization, budget development, and expenditure tracking, to project delivery and close-out. Emphasis is placed on actively contributing to a low, steady rate increase over the long term with an effort of zero rate increase in the next two years while meeting the branch's priority investment needs.

Significant efforts have been made in improving the accuracy in capital program planning and delivery with consideration on capacity. The foundation for an optimal capital planning and delivery practice is built on a thorough understanding of the expected portfolio of work that the organization needs to undertake, with the insight needed to determine the appropriate resourcing and risk mitigation strategies to employ in the delivery model.

In the current budget cycle, a total of \$187 million has been allocated for 20+ capital profiles, including funding for the significant, multi-year, critical profiles like Source Separated Organics, Organic Processing Facility, and Vehicle and Equipment Replacement without the need for extra funding requests.

Moving forward, the branch's capital program will continue with the best practice developed, appropriately balancing the growth, process efficiency improvement, rehabilitation, and regulatory requirement needs. A risk-based, process safety, and process reliability focused asset management philosophy will also be incorporated into future capital planning.

Appendix Two: 2021-2022 Action Plan Summary

Strategic Objective Alignment	Key Item	2021-2022 Deliverable
Implement		
Make Transformational Impacts	City Corporation Waste Transformation	Implement three stream waste separation program in all City-controlled facilities and parks
	Edmonton City-wide Cart Roll-Out	Implement four stream curbside collection supported by citizen education for all single-family homes
	Compost Creation	Divert 15,000 tonnes of organic waste to regional facility
	Organics Processing Facility (OPF) to generate alternate fuel sources	Partner selected and build initiated
Deliver Excellent Services	Groundwater Diversion System	Project complete
Manage the Corporation	Records Management	Implement short -term records management system
	Information Technology Transformation	Establish Waste Service dashboard and community of practice
	Commercial Wind-Down	Commercial wind-down complete
Design		
Make Transformational Impacts	Waste Reduction Roadmap	A roadmap to define desired outcomes and supporting actions for the next three years, and provide guidance for up to five years.

	Material Reuse (post-recovery, pre-recycle)	Reuse roadmap crafted in conjunction with Waste Prevention; partnerships and programs piloted.
	Organics and Recycling Capture from Multi-Unit Dwellings	Three year multi-unit roadmap and adaptive management plan
	Multi-Unit Recycling and Innovative Waste Feedstock Processing	Processing and partnership roadmap established to meet 2023+ needs
	Industrial, Commercial & Institutional (ICI) Program Sector	Three year ICI sector roadmap and adaptive management plan
Deliver Excellent Services	Citizen Experience Transformation	Consulting engagement to establish vision and strategy; implementation of customer journey and English Language Learners into Waste Services
	GBA+ and Inclusion	Establish Waste Services GBA+ Centre of Excellence
	Education and Engagement	Consulting engagement secured and complete; establish new education and engagement roadmap aligned to Waste Strategy; increase digital footprint
Manage the Corporation	Digital Service Delivery	<ol style="list-style-type: none"> 1. Consulting engagement secured and complete; establish digital footprint 2. Digital citizen communication implemented 3. Administrative work review; integrate digital opportunities into digital government roadmap
	Asset Management Transformation	Develop asset management strategy and adaptive management plan

Enhance		
Make Transformational Impacts	Single Unit Recycling Collection	Leverage customer journey mapping work to optimize the experience for residents with the goal of maximizing diversion in this area.
	Refuse Derived Fuel (RDF) Facility	New partner(s) sourced to accommodate 15,000 tonnes of RDF annually
	Materials Recovery Facility	Evaluation complete and resulting next steps initiated
Manage the Corporation	Enterprise Performance Metrics (EPM)	Finalize EPM measures for all of Waste Services; establish participation and diversion rates for all sectors, create calculated GHG reduction goal; establish benchmarking schedule
	Advanced Energy Research Facility (AERF)	Finalize contract with industrial partner for full utilization of AERF capacity and cost recovery.
	Alberta Clean Energy Technology Accelerator (ACETA)	Complete design and construction to prepare Site 440 for leasing and operation.
	Clover Bar Landfill	Closure of Class 2 Landfill and transition of landfill into post-closure monitoring; completion of design, permits and approvals for landfill gas (LFG) to renewal natural gas (RNG) project; completion of LFG collection system construction works; construction of LFG to RNG plant and RNG injection station.
Influence & Partner		
Make Transformational Impacts	Extended Producer Responsibility (EPR) for	Continue to work with the ACES team to promote EPR in Alberta

	Packaging and Paper Products	
	St. Albert	Support the City of St Albert in their project to determine the factors affecting adoption of a different approach to waste management practices by a mid-sized municipality.
Reimagine		
Manage the Corporation	Consolidation of Services into Central Locations	Reuse activities centralized, centralized receiving at Eco Stations and Residential Transfer station, 311/Waste Hotline alignment
	Optimize Service Usage	Use technology to deliver real-time line up information, align hours of operation to optimize labour costs
	Modify Service Offering	In conjunction with prevention, organics processing, and recycling roadmap, develop tactical plans for any required changes in product disposal.
	Shared Cost Review and Alignment	Shared Cost review completed; recommendations implemented
	Modernized Workforce	Instill COE leadership competencies across the branch; achieve full level two people capability maturity; develop strategic workforce plan to assist emerging workforce model