Edmonton
City Council

# Utility Committee - Agenda

Date: March 25, 2022
Time: 9:30 a.m. - 5:00 p.m.
Location: Council Chamber, 2nd floor, City Hall

Call to Order: 9:30 a.m.
Lunch: Noon - 1:30 p.m.
Recess: 3:30 p.m. - 3:45 p.m.
Adjournment: 5 p.m.

Chair: T. Cartmell  Vice Chair: A. Paquette
Members: M. Janz, A. Salvador, A. Stevenson, K. Tang

**Please note:** City Hall is open to the public at reduced capacity for this meeting. Members of the public may choose to participate at Council and Committee meetings in person or remotely. You can request to speak up until your item has been dealt with. The public is invited to view in-progress meetings online via the Agenda, Council on the Web or City Council's YouTube Channel.

For additional information, contact the Office of the City Clerk at (780) 496-8178.

---

Pages

1. **Call to Order and Related Business**
   - 1.1. Call to Order and Land Acknowledgement
   - 1.2. Roll Call
   - 1.3. Adoption of Agenda
   - 1.4. Approval of Minutes 3
     - February 4, 2022, Utility Committee
   - 1.5. Protocol Items
2. **Items for Discussion and Related Business**
   - 2.1. Select Items for Debate
   - 2.2. Vote on Reports not Selected for Debate
   - 2.3. Requests to Speak
     Refer to Summary of Agenda Changes

2.4. Requests for Specific Time on Agenda
Refer to Summary of Agenda Changes

3. Councillor Inquiries

4. Reports to be Dealt with at a Different Meeting
None

5. Requests to Reschedule Reports 7

5.1. Watershed Management Update - North Saskatchewan River Regional Plan Status Update
Revised Due Date: November 4, 2022

6. Public Reports

6.1. Single-use Item Reduction Strategy 9
Council approval required

6.2. Multi-Unit Strategy - Alternative Business Model 51
Council approval required

6.3. EPCOR Water Services Inc. - 2022 Water, Wastewater and Drainage Services Operational Plan 165

7. Responses to Councillor Inquiries
None

8. Motions Pending
None

9. Private Reports
None

10. Notices of Motion and Motions without Customary Notice

11. Adjournment

Edmonton City Council

**Utility Committee Minutes**

February 4, 2022
9:30 a.m.
Council Chamber, 2nd floor, City Hall

Present: T. Cartmell, M. Janz, A. Paquette, A. Salvador, A. Stevenson, K. Tang, A. Sohi

---

## 1. Call to Order and Related Business

### 1.1 Call to Order and Land Acknowledgement

Councillor T. Cartmell called the meeting to order at 9:36 a.m., Friday, February 4, 2022, and acknowledged that Utility Committee meets on the traditional land of Treaty 6 Territory. The Chair also acknowledged the diverse Indigenous peoples whose ancestors' footsteps have marked this territory for centuries such as: Cree, Dene, Saulteaux, Blackfoot, Nakota Sioux, as well as Metis and Inuit, and now settlers from around the world.

### 1.2 Roll Call

Councillor T. Cartmell conducted roll call and confirmed the attendance of Members of Utility Committee.

**Mayor A. Sohi is a Committee Member pursuant to section 15(3), Council Committees Bylaw 18156*

Councillors S. Hamilton, A. Knack, K. Principe, J. Rice, E. Rutherford, and J. Wright; and C. Schlamp, M. Barnes and T. Orbell, Office of the City Clerk, were also in attendance.

### 1.3 Adoption of Agenda

**Moved by:** A. Sohi

That the February 4, 2022, Utility Committee meeting agenda be adopted with the following change:

Orders of the day:

- That the Orders of the day be changed to adjourn no later than 10 a.m., Friday, February 4, 2022.

In Favour (7): T. Cartmell, M. Janz, A. Paquette, A. Salvador, A. Stevenson, K. Tang, and A. Sohi

**Carried (7 to 0)**

### 1.4 Approval of Minutes

**Moved by:** T. Cartmell

That the December 9, 2021, Utility Committee meeting minutes be approved.

In Favour (7): T. Cartmell, M. Janz, A. Paquette, A. Salvador, A. Stevenson, K. Tang, and A. Sohi

**Carried (7 to 0)**

### 1.5 Protocol Items

There were no Protocol Items.

## 2. Items for Discussion and Related Business

### 2.1 Select Items for Debate

The following item was selected for debate: 6.1.

### 2.2 Vote on Reports not Selected for Debate

**Moved by:** T. Cartmell

That the recommendation in the following report be approved:

- 6.2 EPCOR Water Services Inc. - Utility Committee Reporting Requirements

In Favour (7): T. Cartmell, M. Janz, A. Paquette, A. Salvador, A. Stevenson, K. Tang, and A. Sohi

**Carried (7 to 0)**

### 2.3 Requests to Speak

There were no Requests to Speak.

### 2.4 Requests for Specific Time on Agenda

There were no requests for items to be dealt with at a specific time on the agenda.

## 3. Councillor Inquiries

There were no Councillor Inquiries.

## 4. Reports to be Dealt with at a Different Meeting

There were no Reports to be Dealt with at a Different Meeting.

## 5. Requests to Reschedule Reports

There were no Requests to Reschedule Reports.

## 6. Public Reports

### 6.1 Edmonton Cart Rollout Update

The following members of Administration’s delegation made a presentation:

- G. Cebryk, Deputy City Manager, City Operations
- D. Jubinville, City Operations

The following member of Administration's delegation made a presentation and answered questions:

- J. Goebel, City Operations

**Moved by:** A. Paquette

That the February 4, 2022, City Operations report CO00921, be received for information.

In Favour (7): T. Cartmell, M. Janz, A. Paquette, A. Salvador, A. Stevenson, K. Tang, and A. Sohi

**Carried (7 to 0)**

### 6.2 EPCOR Water Services Inc. - Utility Committee Reporting Requirements

This item was not selected for debate and was dealt with as part of item 2.2. The following motion carried:

That the February 4, 2022, Financial and Corporate Services report FCS00936, be received for information.

## 7. Responses to Councillor Inquiries

There were no Responses to Councillor Inquiries on the agenda.

## 8. Motions Pending

There were no Motions Pending on the agenda.

## 9. Private Reports

There were no Private Reports on the agenda.

## 10. Notices of Motion and Motions without Customary Notice

Councillor T. Cartmell asked whether there were any Notices of Motion. There were none.

## 11. Adjournment

The meeting adjourned at 9:58 a.m., Friday, February 4, 2022.

Chair

City Clerk

# Requests to Reschedule Reports
# Utility Committee
# March 25, 2022

---

5.1 Watershed Management Update - North Saskatchewan River Regional Plan Status Update

Urban Planning and Economy - UPE00797

**Original Due Date:** March 25, 2022

**Revised Due Date:** November 4, 2022

- The province's decision on the coal policies that impact headwaters has been delayed, and Administration will not have the information requested to advise on the need for a City of Edmonton watershed management plan in order to report back to Committee until this information from the province is available.

**Recommendation:**
That the revised due date of November 4, 2022, Utility Committee, for the Urban Planning and Economy report UPE00797, Watershed Management Update - North Saskatchewan River Regional Plan Status Update, be approved.

COUNCIL REPORT

# SINGLE-USE ITEM REDUCTION STRATEGY

## RECOMMENDATION

That Utility Committee recommend to City Council:

1. That Edmonton's Plan to Reduce Single-use Items, as set out in Attachment 1 of the March 25, 2022, City Operations report CO01033, be approved.
2. That Administration develop a draft Single-use Items Bylaw based on the direction as set out in Attachment 2 of the March 25, 2022, City Operations report CO01033.

### Report Purpose

**Council decision required**

Council is being asked to approve Edmonton's Plan to Reduce Single-use Items and to approve the recommended direction of the proposed Single-use Items Bylaw.

### Executive Summary


- Each year Edmontonians throw out an average of 450 million single-use items (SUI) such as shopping bags, takeout containers, cups, utensils and straws. The majority end up being discarded in the garbage stream, while others end up littering streets, parks and other open spaces such as the river valley.
- Edmonton's Plan to Reduce Single-use Items (SUI Plan) prioritizes the use of reusables and elimination of unnecessary SUI, no matter the material (compostable or not). Shifting how Edmontonians think about SUI is a key step towards changing overall attitudes towards waste reduction and will contribute to making Edmonton Climate Resilient.
- Edmonton's 25-year Comprehensive Waste Management Strategy (Waste Strategy) emphasizes the importance of waste reduction, and included a commitment to banning plastic shopping bags and plastic straws by January 2021. However, due to the COVID-19 pandemic, a bylaw banning plastic shopping bags and plastic straws was delayed.
- Edmonton's first Waste Reduction Roadmap (Roadmap '24) was approved at the May 17, 2021, City Council meeting (April 30, 2021 City Operations report CO00390) and reaffirmed the City's intent to regulate SUI. Utility Committee requested that a municipal plan and bylaw to reduce SUI be coordinated with, but not delayed by, related provincial and federal regulations, and directed Administration to proceed with development.

## SINGLE-USE ITEM REDUCTION STRATEGY

- Administration recommends the approval of Edmonton's Plan to Reduce Single-use Items (Attachment 1). The SUI Plan describes the types of SUI most suitable for regulation at this time, voluntary reduction programs, the need for programs to support equity-seeking groups, and the role of effective communication and outreach campaigns.
- Administration is seeking feedback on the Proposed Bylaw Direction (Attachment 2). The proposed direction describes Administration's recommendations for regulating the distribution of shopping bags, polystyrene foam food serviceware (cups, containers, bowls and plates), foodware accessories (e.g. utensils, straws, prepackaged condiments and napkins) and single-use cups (other than polystyrene foam).
- The recommendation supports the ongoing implementation of Edmonton's 25-year Comprehensive Waste Management Strategy and the Waste Reduction Roadmap, and helps realize the goals to be Greener as We Grow, and achieve Climate Resilience as outlined in The City Plan and ConnectEdmonton, respectively.

## REPORT

Edmonton's Plan to Reduce Single-use Items (SUI Plan) prioritizes the elimination of unnecessary single-use items (SUI) and is a step in the transition to making reusables the standard. Other pending federal and provincial regulations focus solely on single-use plastic items; however, there are negative impacts associated with SUI made of all materials. Eliminating unnecessary SUI and replacing them with reusable alternatives are the only ways to achieve universally improved environmental outcomes.

The SUI Plan has been informed by research and findings from other municipal governments, as well as input from residents, businesses and industry associations in Edmonton. It includes recommended regulatory actions (such as bans, fees, other requirements) where alternatives are readily available, industry is ready to comply, and unintended consequences can be mitigated through bylaw exemptions and supporting programs. In addition, the SUI Plan recommends voluntary actions for other SUI to further incent reductions. Overall, the City aims to reduce the number of regulated SUI used in Edmonton by 20 per cent within four years.

### Need/Opportunity

Each year, Edmontonians dispose of an average of 450 million SUI, including shopping bags, takeout containers, cups, utensils and straws, comprising approximately 10,000 tonnes of garbage. Additional SUI are thrown in the recycling stream, or are littered in the environment. SUI that are disposed of in the garbage stream are typically landfilled, and no matter what SUI are made of or how SUI are disposed or processed, their production, distribution, use, and end of life management consume materials and energy that could be avoided if the SUI were not used. Littering of these items results in significant and widespread consequences—including increased clean-up costs, habitat damage and clogged storm drains—and contributes to the proliferation of microplastics in the environment.

Edmonton's Waste Strategy emphasizes waste reduction, and included a commitment to ban plastic shopping bags and plastic straws by January 2021. Due to the COVID-19 pandemic, a bylaw banning plastic shopping bags and plastic straws was delayed. Edmonton's first Waste Reduction

## SINGLE-USE ITEM REDUCTION STRATEGY

Roadmap (Roadmap '24) was approved at the May 17, 2021, City Council meeting (City Operations report CO00390) and reaffirmed the City's intent to regulate SUI. Edmonton's Plan to Reduce Single-use Items, like the Waste Strategy and Waste Reduction Roadmap, supports the City of Edmonton's commitments to climate resilience and the Big City Move to be Greener as We Grow.

The objectives of the SUI Plan are to reduce waste generation in support of Edmonton's goal of zero waste; reduce terrestrial and aquatic litter; and reduce overall impacts associated with the production, distribution, use and disposal of SUI. These objectives need to be met while mitigating potentially disproportionate impacts on equity-seeking groups based on identity factors like sex, gender, age, place of residence, ethnicity, socio-economic status, employment status and ability. Economic impacts and costs were also considered for businesses, consumers and City Administration. Over the long term, research has shown that businesses experience cost savings by switching to reusable alternatives, and reduced SUI may reduce the City's costs for litter clean up and servicing waste receptacles in public spaces. The recommendations also align with current draft federal regulations for single-use plastics.

### Recommendations

Administration recommends the approval of Edmonton's Plan to Reduce Single-use Items and the development of a stand-alone bylaw to regulate SUI. The SUI Plan describes the types of SUI most suitable for regulation at this time, voluntary reduction programs, the need for programs to support equity-seeking groups, and the role of effective communication and outreach campaigns.

A bylaw is recommended to regulate the distribution of shopping bags, polystyrene foam food serviceware (cups, containers, bowls and plates), foodware accessories (e.g. utensils, straws, prepackaged condiments and napkins) and cups (other than polystyrene foam). This bylaw would apply to all City of Edmonton business licence and event permit holders, with specific exemptions, as required, to mitigate undesirable consequences and potentially disproportionate impacts. Facilities that do not require a business licence (such as provincially-regulated health care facilities) would not be subject to the SUI bylaw. Any mandatory fees businesses may be required to collect under the bylaw would be retained by businesses and not remitted to the City, due to limitations of the City's authority under the *Municipal Government Act* (MGA).

The recommended regulations for each type of SUI vary, based on the availability of alternatives and experience in other jurisdictions. The recommended regulations are:

| **Single-use Item** | **Recommended Regulatory Approach** |
|---|---|
| Shopping bags | • Ban on plastic shopping bags<br>• Mandatory minimum fee on paper shopping bags and reusable shopping bags |
| Foodware accessories | • Customer request required for single-use accessories made of any material |
| Foam serviceware | • Banned |
| Cups (non-foam) | • Requirement for reusable cups to be used for dine-in orders in restaurants<br>• Requirement for restaurants to accept customers' reusable cups for dine-in and takeout orders |

The proposed bylaw direction is described in more detail in Attachment 2. Administration is seeking feedback from Utility Committee and City Council on the direction prior to drafting the bylaw.

Sufficient lead time for implementation and clear communication from the City were identified by businesses as key success factors. Administration recommends a one-year transition period following bylaw adoption. The lead time required to draft the bylaw after receiving Council input, followed by public hearings required under the MGA Charter, and finally, the recommended one year transition period after the bylaw is passed, will help ensure that the implementation of the SUI Plan will be resilient to the future of the pandemic, and effective in a range of possible conditions. During the transition period, extensive City-led communication and outreach efforts will inform organizations and residents about the upcoming changes. Bylaw guidance documents will prioritize icons and images over text, so that they are inclusive to various cultures and languages.

Administration recommends that monitoring for bylaw enforcement purposes should be complaint-driven. If a business is found to be non-compliant with the bylaw, the initial response will focus on education and support to help bring the business into compliance. Enforcement (via ticketing) will, like other bylaws, be at the discretion of a municipal enforcement officer and would be warranted in cases of deliberate and harmful non-compliance after outreach efforts have been exhausted.

Administration also recommends developing support programs to assist residents and businesses as they transition away from the use of SUI and to help ensure bylaw compliance. One support program is already under development: a new grant (in partnership with, and funded by, Capital City Clean Up) to help non-profit organizations with the cost of replacing SUI with reusable or recyclable alternatives. Additional support programs will be developed through engagement with residents once the direction of the bylaw is confirmed by City Council. These programs could include developing and implementing ways for low-income residents to access low-cost, clean reusable bags and reducing barriers that they may face related to using reusable cups.

Voluntary programs will be introduced for SUI that are not covered by the proposed bylaw. For example, Administration is not currently recommending that the bylaw address food serviceware that is not made of foam. Administration will engage with businesses to encourage them to adopt reusable serviceware and use serviceware that is locally recyclable.

## Budget/Financial Implications

Edmonton's Plan to Reduce Single-use Items will be funded within the approved utility budget and the utility rate forecasts presented in the December 9, 2021, Utility Committee, City Operations report CO00823, Waste Services 2022 Rate Filing and Fall 2021 Supplemental Budget Adjustment. Non-utility funding may be leveraged where actions integrate with the strategic priorities, work plans and approved budgets of other City business areas funded by the tax levy.

## SINGLE-USE ITEM REDUCTION STRATEGY

### Legal Implications

City Council has the authority to pass a bylaw to regulate single-use items under the City of Edmonton Charter (the "Charter"), 2018 Regulation, AR 39/2018 and the *Municipal Government Act* (RSA 2000, c M-26 (the "MGA")). In particular, the Charter authorizes City bylaws relating to the well-being of the environment, including bylaws providing for the creation, implementation and management of programs respecting greenhouse gas emission reduction, environmental conservation and stewardship, the protection of biodiversity and habitat, and waste reduction and diversion. As with any Charter bylaw, a public hearing will be required before a new bylaw regulating SUI can be given a third reading by City Council.

## COMMUNITY INSIGHT

The development of the SUI Plan considered community insights from three separate engagement and market research initiatives.

1. Input was collected from thousands of Edmontonians during the 2018 and 2019 public engagement sessions that informed the 25-year Waste Strategy. A majority of residents, business organizations and individual businesses who participated in that engagement favoured eliminating or restricting single-use products including polystyrene foam, plastic straws, plastic bags, takeout containers and plastic utensils.
2. During the development of the Waste Reduction Roadmap in 2020 and 2021, additional input was gathered from the general public and stakeholders to help shape priorities (April 30, 2021, City Operations report CO00390). Stakeholder groups included non-governmental organizations, organizations that serve vulnerable or marginalized populations, non-residential waste generators, other governments, private haulers and residents. Overall, participants expressed a desire for regulations and other approaches to reduce product packaging, including the use of fewer single-use items (64 per cent). Many respondents also noted that they already own and are able to use reusable cups (66 per cent) and reusable shopping bags (61 per cent), suggesting that some behaviours to reduce SUI have already become commonplace.
3. The SUI Plan was further supported by targeted outreach and market research (consisting of focus groups and in-depth interviews) with over 60 businesses and residents. Outreach was directed at non-profit organizations and business and industry associations to help determine the impacts of the proposed regulations on the organizations and their members, and how negative impacts could be mitigated.

## GBA+

Gender-based analysis plus (GBA+) was embedded within the development of Edmonton's Plan to Reduce Single-use Items to consider the needs of all Edmontonians and reduce barriers associated with accessibility, socio-economic conditions, gender, family structure, language barriers, health-related conditions and other identity factors.

The City of Edmonton's Accessibility Advisory Committee provided guidance that informed the proposed approach. Some Edmonton residents (including people with disabilities and those

recovering from medical procedures) rely on straws to safely consume beverages and nutrition; flexible plastic straws best meet their needs. Because an outright ban on plastic straws could create barriers, the proposed regulation allows straws of all kinds to be provided on request. A reduction in SUI is expected by no longer providing straws by default and a wide range of needs are protected by making straws available on request.

Other equity-seeking groups, like those experiencing low income, homelessness or that are at risk of homelessness, face additional barriers to using reusable alternatives to SUI. These barriers can include lack of access (due to cost), lack of storage or cleaning facilities, reliance on food that comes packaged in SUI, and tight and inflexible schedules that make it difficult to plan ahead. The recommended bylaw direction and support programs are intended to provide residents with ways to reduce the perceived and actual cost burden of regulations, and together with support programs, are intended to balance the need for equity with the need to achieve environmental commitments through waste reduction.

Administration is committed to working with partners and Edmontonians in the implementation of the proposed regulations to minimize the risks of unintended consequences on equity-seeking groups and work towards implementing equity measures.

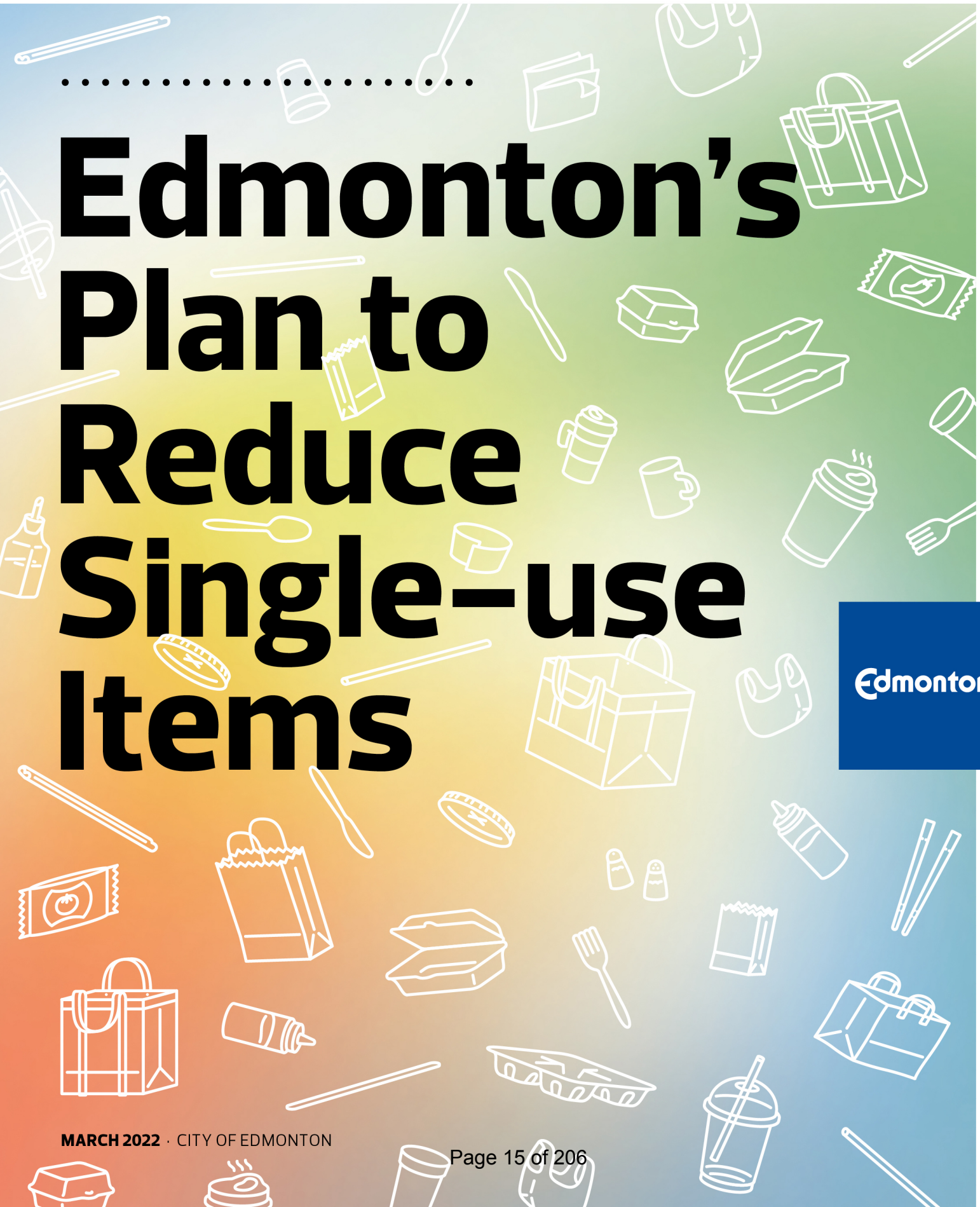
## RISK ASSESSMENT

| **Risk Element** | **Risk Description** | **Likelihood** | **Impact** | **Risk Score** (with current mitigations) | **Current Mitigations** | **Potential Future Mitigations** |
|---|---|---|---|---|---|---|
| **If recommendation is not approved** | | | | | | |
| Governance | The City would need to rely on Federal regulations on single-use plastics. These regulations are anticipated to be implemented more slowly than the proposed municipal bylaw, and do not address waste reduction. The federal regulations are still in draft, there is also a degree of uncertainty about final scope and implementation timeline. | 5 - almost certain | 3 - major | 15 - high | The approval of Edmonton's Plan to Reduce Single-use Items keeps the City aligned with the goals of the 25-year Waste Strategy regardless of the outcomes of the federal regulations. | Once the federal regulations are implemented, the City could further its understanding of how those regulations may impact its reduction goals.<br><br>Administration will leverage engagement for other projects being implemented in support of the Waste Strategy to understand and address the impact of not proceeding with a bylaw to reduce SUI. |

## ATTACHMENTS

1. Edmonton's Plan to Reduce Single-use Items
2. Recommended Bylaw Direction

# Edmonton's Plan to Reduce Single-use Items



**MARCH 2022** · CITY OF EDMONTON

# Table of Contents

# Executive Summary

The plan to reduce single-use items (SUI Plan) has been developed to help Edmonton's residents, visitors and organizations reduce their reliance on single-use items. Single-use items (SUI) include shopping bags, straws, utensils, individually packaged condiments, cups and lids, and containers. They can be made of a range of materials including conventional plastics, alternative plastics that may be compostable or biodegradable and paper or other fibre products. Regardless of their composition, the production and consumption of SUI has environmental, social and economic impacts, and the management of these items creates costs for the City and businesses.

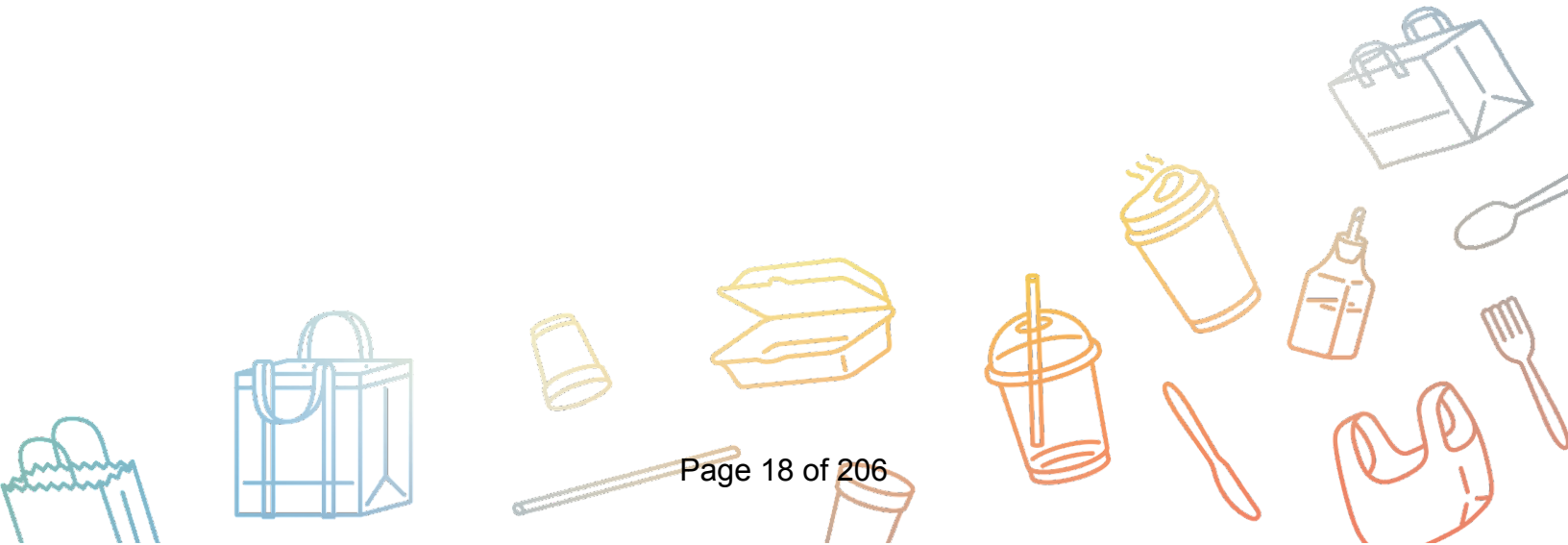
The SUI Plan aligns with the Zero Waste Framework that forms the foundation of the City's approved 25-year Waste Strategy. That means that priority is given to eliminating unnecessary SUI and making reusables the norm rather than simply replacing single-use plastic items with single-use items made of other materials. Since non-plastic SUI also have negative impacts associated with production and distribution, eliminating unnecessary SUI, and replacing essential SUI with reusable items, are the only approaches that have universally improved outcomes. A preference for reduction, rather than substitution, is fundamental to the SUI Plan.

The SUI Plan has been informed by research and findings from other local governments, as well as input from residents, businesses and industry associations in Edmonton. The SUI Plan recommends a combination of regulatory and voluntary approaches to reduce SUI. Regulatory actions reflect the City's level of authority and are proposed for situations where alternative products are readily available, industry is ready to comply and unintended consequences can be mitigated. Voluntary actions will be encouraged by education and outreach, working with other levels of government and leading by example. Table ES1 summarizes which SUI are proposed to be regulated by bylaw, and which SUI will be addressed through voluntary actions.

**Table ES1. Summary of recommended approaches**

| Approach | Type of Single-use Item |
|---|---|
| Regulated by bylaw | Shopping bags |
| | Foodware accessories (e.g. utensils, straws, stirrers, splash sticks, cocktail sticks, toothpicks, pre-packaged condiments and napkins) |
| | Polystyrene foam (Styrofoam, or "foam") food serviceware (cups and containers) |
| | Other disposable cups (non-foam) |
| Voluntary actions | Other disposable containers (non-foam) |

The bylaw will come into effect one year after it is adopted. During that year, the City will focus on raising awareness among organizations and residents, and building capacity within the business community to comply. Affected businesses will be offered plain language toolkits and printable signage, and a grant program will be offered to support non-profit organizations with the transition. Educational campaigns will focus on helping residents understand their role in reducing negative environmental impacts and making reusables the norm. Once the bylaw is in effect, it will be enforced with a priority for education and outreach except where more strict enforcement is deemed essential to the overall SUI Plan.



# Introduction

Single-use items are designed to be thrown away after being used only once. They can be made of a variety of materials, including plastic, wood, paper and other fibre products. SUI can typically be grouped into three categories: packaging, convenience items and essential items.[1] The SUI Plan focuses only on some types of secondary packaging and convenience items.

Each year Edmontonians throw away an average of 450 million SUI such as shopping bags, takeout containers, cups, utensils and straws. While some of these items can be recycled, the majority ends up being discarded, either in the garbage stream or as litter. SUI that are disposed of in the garbage stream are typically landfilled, and represent consumed resources and energy. Littering of these items results in significant and widespread consequences - including increased clean up costs, habitat damage and clogged storm drains - and contributes to the proliferation of microplastics in the environment.[2]

# Guiding Principles

The Zero Waste Framework and waste management hierarchy adopted by the City of Edmonton in the 25-year Waste Strategy forms the foundation of Edmonton's Plan to Reduce Single-use Items. Figure 1 illustrates how the waste management hierarchy applies to SUI. Preference is given to eliminating or reducing SUI by using them only when necessary (e.g. straws are not necessary for most people; shopping bags are not needed for small purchases).

[1] **Packaging** includes primary packaging (e.g. food wrappers, retail product packaging, beverage and bottles for personal care products), secondary packaging (e.g. shopping bags, fruit and vegetable bags, food containers), and tertiary packaging (used to group larger quantities of items for transporting them from production facility to point of sale). **Convenience items** include cutlery, stir sticks, accessories such as napkins and single serve condiment containers, hot and cold drink cups and lids, cup carrying containers, straws and quick-serve containers. **Essential items** include healthcare items such as personal protective equipment and sterile packaging.

[2] Characterization of microplastics and anthropogenic fibres in surface waters of the North Saskatchewan River, Alberta, Canada, Government of Canada Science Assessment of Plastic Pollution

A preference for reduction, rather than substitution is fundamental to the SUI Plan.

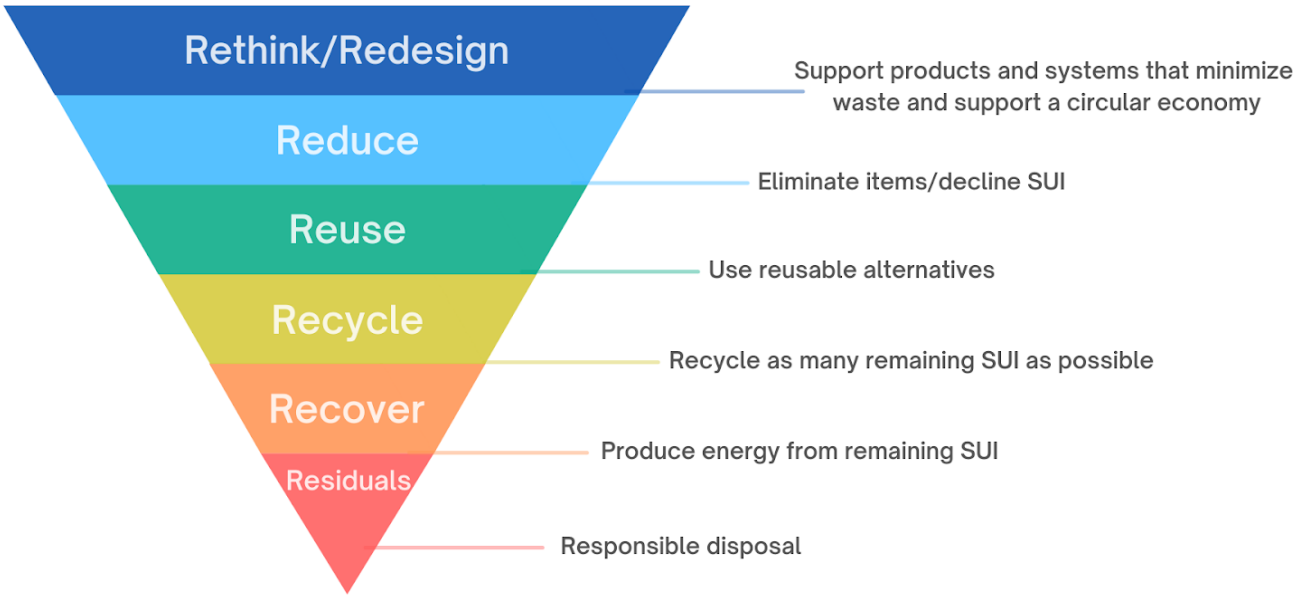



**Figure 1. Waste management hierarchy applied to SUI**

In addition to overall alignment with the waste management hierarchy, the following principles shaped Edmonton's approach to reducing reliance on single-use items:

- **Build capacity** - The SUI Plan commits to raising awareness, providing education, and building capacity within the business community to adjust to the bylaw before enforcement. Capacity building may include technical assistance, printable signage and public education materials. In addition, voluntary measures have been included that will be encouraged, but not enforced.
- **Provide flexibility** - A combination of regulatory and voluntary measures is proposed, recognizing that there is no one-size-fits-all solution to eliminating SUI. Implementation timelines will also be flexible, with deadlines set to allow businesses sufficient time to adapt.
- **Be inclusive** - Actions to reduce SUI need to be accompanied by support programs to address potentially negative impacts on people who have accessibility needs, health-related challenges, or who have vulnerable socio-economic conditions. The SUI Plan is informed by a Gender Based Analysis Plus (GBA+) assessment that considered how diverse groups of people may experience the proposed changes. The implementation of the SUI Plan will require ongoing listening to vulnerable populations and adaptation to meet their needs.

- **Harmonize** - Strategies and bylaws in other Alberta municipalities and western Canada were reviewed and have influenced Edmonton's approach. This harmonization will reduce barriers on affected businesses and streamline education and outreach efforts. Draft federal regulations related to single-use plastics have also influenced the SUI Plan.
- **Continuously improve** - Impacts of the bylaw will be assessed within three years of implementation to determine if and when stronger measures are suitable as new alternatives to SUI become available, capacity for reduction grows and new solutions to mitigate unintended consequences are developed.

These principles incorporate feedback gathered from residents and businesses during engagement in 2019 and 2021.

# Objectives

Edmonton's Plan to Reduce SUI is a foundational step towards supporting Edmontonians in reducing waste. Shifting the way Edmontonians think about SUI is expected to change attitudes towards waste and waste reduction in general.

The reduction of SUI is designed to achieve a range of environmental objectives, while minimizing potential social and economic impacts. The environmental objectives include:

- Reduce waste generation and support Edmonton's Zero Waste Framework;
- Reduce terrestrial and aquatic litter; and
- Reduce overall life cycle impacts (e.g. greenhouse gas emissions, water consumption and release of toxic chemicals) associated with the production, distribution, use and disposal of SUI.

The examination of social impacts considered the level of support expressed by residents, businesses, associations and institutions. Conversations with stakeholders showed that there is ongoing public interest and support for action to reduce SUI. Social impact analysis also considered the potential for disproportional effects on groups based on sex, gender, age, place of residence, ethnicity, socio-economic status, employment status, disability and various other identity factors.

Economic impacts were examined through the lens of businesses, consumers and the City. Businesses are expected to save money in the long-term compared to the status quo, as switching to reusables has led to documented cost savings in other jurisdictions. Fees on SUI

will be structured to allow consumers to avoid them by choosing reusable options. Reduced SUI may also reduce the City's costs for litter clean up and servicing public space waste receptacles. The efficiency of the City's waste processing facilities may also be improved by reducing SUI contamination in the recycling and organics streams. While some SUI are recyclable, they are often not sorted properly by residents, which can cause problems with the equipment at the Materials Recovery Facility and impact the marketability of Edmonton's recyclables.

Additional objectives, such as aligning with draft federal regulations for single-use plastics, and ensuring the enforceability of any potential regulations, were also considered.

# Context

## Types and Quantity of SUI in Edmonton

It is estimated[3] that over 450 million SUI are thrown in the garbage every year in Edmonton, across both the residential and non-residential sectors (Figure 2). These numbers include items made of paper, plastic, bamboo and other materials.

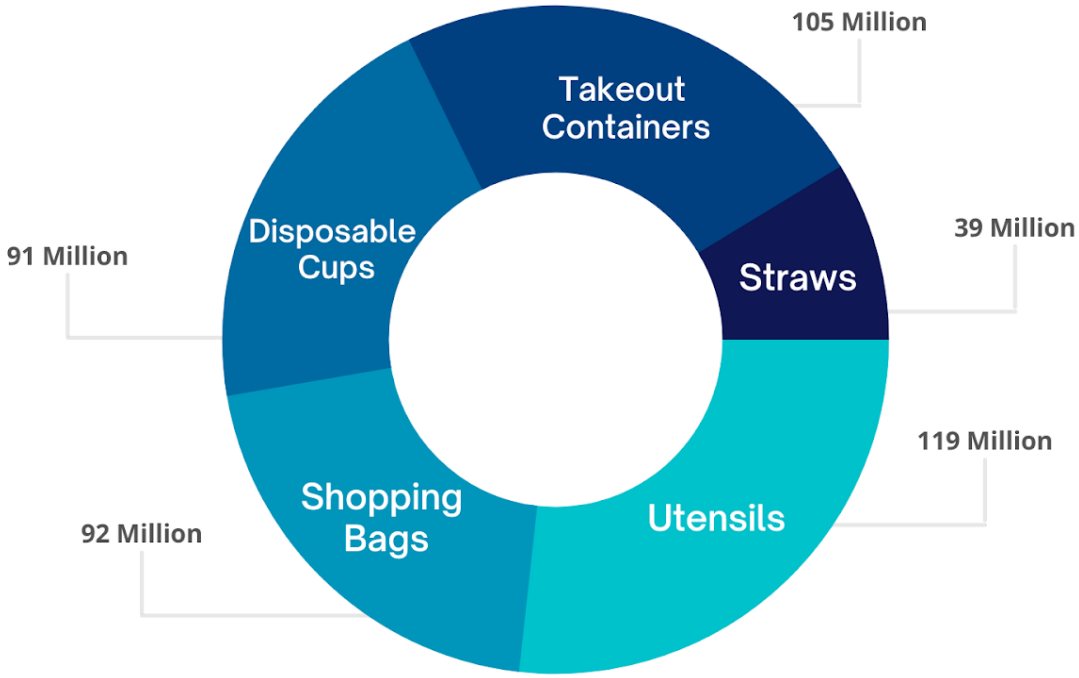



**Figure 2. Estimated number of SUI disposed in Edmonton annually**

[3] Based on detailed waste composition studies conducted in Spruce Grove (2019) and Metro Vancouver (2018).

The above items are estimated to make up approximately 10,000 tonnes of garbage. Additional SUI (such as paper and plastic shopping bags, and some takeout containers) are also found in the recycling stream and have not been quantified.

SUI are also commonly littered; 42 per cent of large litter items identified in Edmonton's 2019 litter audit were single-use items. Single-use cups and bags were among the most littered items.

## Relation to Existing Municipal Strategies and Initiatives

Edmonton's 25-year Comprehensive Waste Management Strategy (25-year Waste Strategy) was approved in 2019, and sets the City of Edmonton on a path of ambitious, transformational change. It emphasizes waste reduction in addition to affirming a commitment to divert 90 per cent of waste from landfill across all sectors.

Single-use plastics were discussed in detail during engagement associated with the development of the 25-year Waste Strategy. A majority of Edmonton residents and businesses that participated in the engagement supported the elimination, restriction or addition of fees on polystyrene foam (Styrofoam, or "foam") (84 per cent for both sectors), straws (81 per cent of residents and 82 per cent of businesses) and plastic checkout bags (83 per cent of residents and 87 per cent of businesses).

In 2021, Edmonton's first Waste Reduction Roadmap (Roadmap '24) was approved. Roadmap '24 identified programs, services and regulations that will result in less waste being produced by residents, businesses, public institutions and other organizations, for the period 2021 to 2024. Residents and other stakeholders were engaged during the development of Roadmap '24, and reiterated a desire for regulations and other approaches to reduce product packaging, including the use of fewer disposables (63 per cent) as well as reducing other single-use items (64 per cent). Many respondents also noted that they are able to use reusable cups (66 per cent) and reusable shopping bags (61 per cent), suggesting that some single-use reduction consumer behaviours have already become commonplace. The plan to reduce single-use items is an outcome of Roadmap '24, and Utility Committee specifically directed that both the SUI Plan and a bylaw to reduce SUI be coordinated with, but not delayed by, related provincial and federal regulations.

The SUI Plan, like the 25-year Waste Strategy and Roadmap '24, supports the City of Edmonton's commitment to climate resilience and the Big City Move to be Greener as We Grow.

## COVID-19 Pandemic

The COVID-19 pandemic led governments and retailers to take a cautious approach towards reusable items, and slowed the adoption and implementation of bylaws to restrict single-use items. Now that two years have passed since the pandemic was declared, more is known about the transmission of COVID-19, and authorities such as the US Centers for Disease Control have stated that transmission from contaminated surfaces does not contribute substantially to new infections.[4] Furthermore, retailers and the public are recognizing that disposable items, which pass through many hands in complex supply chains, are not inherently cleaner than reusable alternatives.

This research has given local governments and retailers more confidence to proceed with SUI restrictions and renewed efforts to promote reuse as a way to reduce waste and support the principles of the circular economy.

## Gender Based Analysis (GBA+)

It is vital that SUI reduction measures take into account the needs of all Edmontonians. A gender-based analysis plus (GBA+) lens[5] was applied to the selection of preferred approaches to reducing SUI. The use of a GBA+ framework structured the consideration of potential impacts of regulations on certain demographic groups, including people with disabilities, low-income individuals, women and single parents. For example, some individuals (including people with disabilities and those recovering from medical procedures) rely on straws to safely consume beverages and nutrition, and flexible plastic straws best meet their needs.[6] These needs were taken into consideration in designing an approach to reduce the unnecessary use of straws. Similarly, the GBA+ analysis revealed that mandating fees for some SUI to disincentive their use

[4] Scientific Brief: SARS-CoV-2 Transmission | CDC

[5] GBA+ is a process to examine and address how policies, programs and services impact diverse individuals and groups. Multiple identity factors, including age, race, ability, education, ethnicity, geography, health, language, class, sex and gender need to be considered to improve planning and decision-making. By using a GBA+ lens, diverse perspectives, experiences and needs are taken into account to create services that serve everyone.

[6] Research shows that substitutes for single-use plastic flexible straws - including straws made from metal, silicone, glass, paper, bamboo and pasta - do not meet accessibility needs. Non-plastic straws typically cannot be repositioned, which is a key consideration. Straws made of alternate materials can pose choking hazards if the straw breaks (pasta, bamboo), may not be safe at high temperatures (metal, glass), may be a food allergen risk (pasta), are not rigid enough (paper), or pose an injury risk (metal, glass). Reusable straw substitutes can also be difficult to clean in a commercial setting. Using a straw that has not been properly sanitized increases the risk of other health concerns, particularly for persons who are immunocompromised.

can be a burden on residents. Therefore, efforts have been made in developing the recommendations to ensure that vulnerable individuals can avoid additional fees.

The City will continue to engage with vulnerable populations to develop support programs for regulations to minimize the risk of unintended consequences. This approach balances the need for equity with the achievement of environmental objectives and embodies the SUI Plan's principles of being inclusive and continuously improving.

Tools that are created to support the implementation of the SUI Plan will also be developed with accessibility considerations in mind. For example, icons, images and limited/essential text will be used in educational materials so that the materials are widely accessible.

# Regulatory Approach

## Bylaw Structure

A stand-alone bylaw is proposed, which will apply to all City of Edmonton business licence and event permit holders, with exceptions where necessary. The SUI bylaw will reference, but not impact, the Business Licence Bylaw. Facilities that do not require a business licence (such as provincially-regulated healthcare facilities) will not be subject to the SUI bylaw but are expected to achieve SUI reductions as federal regulations are enacted.

## Bylaw Scope

The bylaw is intended to regulate the distribution of the following types of SUI:

- Shopping bags;
- Foam food serviceware (cups, containers, bowls and plates);
- Foodware accessories (e.g. utensils, straws, pre-packaged condiments and napkins); and
- Cups (other than foam).

The regulations covering each type of SUI will vary, and could include bans, fees, a requirement for items to be requested before they are provided and requirements for reusables. Detailed recommendations are provided as Attachment 2 of City Operations report CO01033. Responding to the direction of City Council, Administration will prepare a bylaw for Public Hearing as early as summer 2022, with the potential to be enacted by City Council later in 2022 and implemented by the end of 2023.

# Voluntary Measures

## Food Serviceware

Administration does not currently recommend a regulatory measure for single-use food serviceware that is not made of foam as there is limited access to and capacity for transitioning to reusable food serviceware for takeout and delivery food services, and the businesses that provide these services continue to face significant challenges stemming from the COVID-19 pandemic. The City will work with businesses to support the adoption of reusable serviceware, and to encourage the use of serviceware that is locally recyclable. The City will also work to educate residents and businesses about the shortcomings of compostable serviceware, which are not currently accepted by the City's diversion programs.

## Applicable to All Single-use Items

### Voluntary Reporting

The City will develop a voluntary reporting program, whereby businesses are encouraged to disclose the type and number of SUI used on an annual basis. Building on the success of the City's Building Energy Benchmarking Program, the City will find ways to recognize businesses that have made exceptional progress towards reducing SUI.

### Incentives

In partnership with Capital City Clean Up, a new grant program will be launched to provide funding to registered non-profit organizations who need help with the cost of replacing SUI with reusable alternatives. The grant will reduce the amount of single-use serviceware used, and support compliance with the proposed bylaw. The grant will also support social enterprise, resulting in positive social and environmental impacts. The intent is for the grant to open for applications after the bylaw is approved.

As participation in a new voluntary reporting program builds, the City will also explore opportunities and mechanisms to accelerate the adoption and/or impact of voluntary measures to reduce SUI by creating targeted financial incentives for reporting organizations where viable and within approved budgets.

### Technical Assistance

Guidance documents related to reducing SUI and replacing disposable SUI with SUI that can be successfully recycled will be developed and promoted as part of the outreach program

associated with bylaw implementation. The documents may also include case studies and calculators that can be used to estimate the cost/savings of switching from SUI to reusable alternatives.

Additional technical assistance for individual businesses will be provided by City subject matter experts as capacity permits. Given the indeterminate demand for hands-on technical assistance, priority will be given to businesses that face unusual challenges related to compliance and those working to introduce new, scalable approaches to transition to reusable items.

### Advocacy for Extended Producer Responsibility

Administration strongly supports the development of Extended Producer Responsibility (EPR) regulations in Alberta, and will continue to engage with Alberta Environment and Parks regarding the details of the regulations. Administration will advocate for producers to be required to report on measures of reuse, and for the list of materials covered by the EPR regulations to include all disposable cups and serviceware. While EPR is traditionally focused on increasing diversion (rather than achieving reduction), Administration appreciates that EPR fees may play a role in incentivizing waste reduction, and that diverting SUI is preferable to the current state where most SUI are disposed of in the garbage.

## Support Programs

Once approval is received from City Council regarding the proposed bylaw direction, Administration will engage further with equity-seeking groups to gain insight on potential unintended impacts of the bylaw, and develop support programs to avoid the creation of undue hardship. An example of a support program would be setting up ways for low-income residents to access low-cost or free reusable alternatives to single-use items.

Businesses will also be encouraged to develop their own community support programs. The City will share examples and case studies of such programs, including accepting donations of reusable bags and cups for other customers, and pay-it-forward models (where customers pay for more SUI than they need to establish a fund for people who can't afford the fees themselves).

# Implementation Approach

## Transition Period

Administration heard from businesses that a key factor in the successful implementation of the bylaw is sufficient lead time between bylaw adoption and the effective date. For this reason, a one year transition period is proposed following bylaw adoption.

The development and implementation of voluntary programs will continue beyond the date the bylaw comes into effect. The SUI Plan will remain in place for the duration of Roadmap '24 and throughout the next Waste Reduction Roadmap. Modifications to the SUI Plan may be identified during the development of subsequent Roadmaps, which may include recommendations for additional regulations to reduce SUI.

## City Initiatives to Raise Awareness

Administration is committed to helping businesses and residents transition to using fewer SUI. Implementation will focus on raising awareness, building capacity and providing incentives, with enforcement of regulations being used once other efforts are exhausted.

During the transition year, the City will work with organizations and residents to build awareness of the upcoming changes. Administration will support organizations by providing them with a toolkit that describes recommended steps to take to prepare for the bylaw, including information about suppliers of preferred types of serviceware. The toolkit will be made available online and publicized widely. An outreach team will also work with Business Improvement Areas and other industry organizations to ensure widespread awareness of the bylaw and toolkit.

## Partnerships to Raise Awareness

The City is not alone in its desire to reduce SUI, and will promote and amplify education and behaviour change campaigns led by industry organizations, not-for-profits and community groups who continue to be instrumental in shifting the collective mindset about waste in Edmonton. The goal is to shift attitudes and societal norms to create lasting behaviour change, and hearing messages from a range of sources, including non-government sources, will contribute significantly to shifting attitudes and behaviours.

## Enforcement Approach

The intent is that all establishments holding a business licence will be required to comply with the bylaw, except where noted in specific exemptions.

Enforcement of the bylaw will be complaint-driven. If a business is found to be non-compliant with the bylaw, there are several actions the City may take. Initial actions will focus on education, outreach and support to help organizations comply with the bylaw requirements. Staff will use discretion, and enforcement will be reserved for cases of deliberate and harmful non-compliance after all outreach and education efforts have been exhausted.

# Monitoring & Targets

## Monitoring

Information from waste characterization studies will help Administration gauge the impact of the SUI reduction plan and bylaw.

Waste Services has committed to conducting regular waste characterization studies that will monitor the amount of SUI in the residential waste streams. The characterization of the commercial waste stream is not currently monitored, but plans are underway to monitor the commercial waste composition at a regional level.

Capital City Clean Up also conducts regular litter audits at over 100 sites and categorizes the findings by type of material. The annual results serve as baseline data and will allow the City to track changes in the occurrence and intensity of litter as a result of SUI reduction tactics.

Administration will also coordinate between departments to undertake public space waste audits. This work is important, as a substantial fraction of SUI are disposed of in public space waste containers.

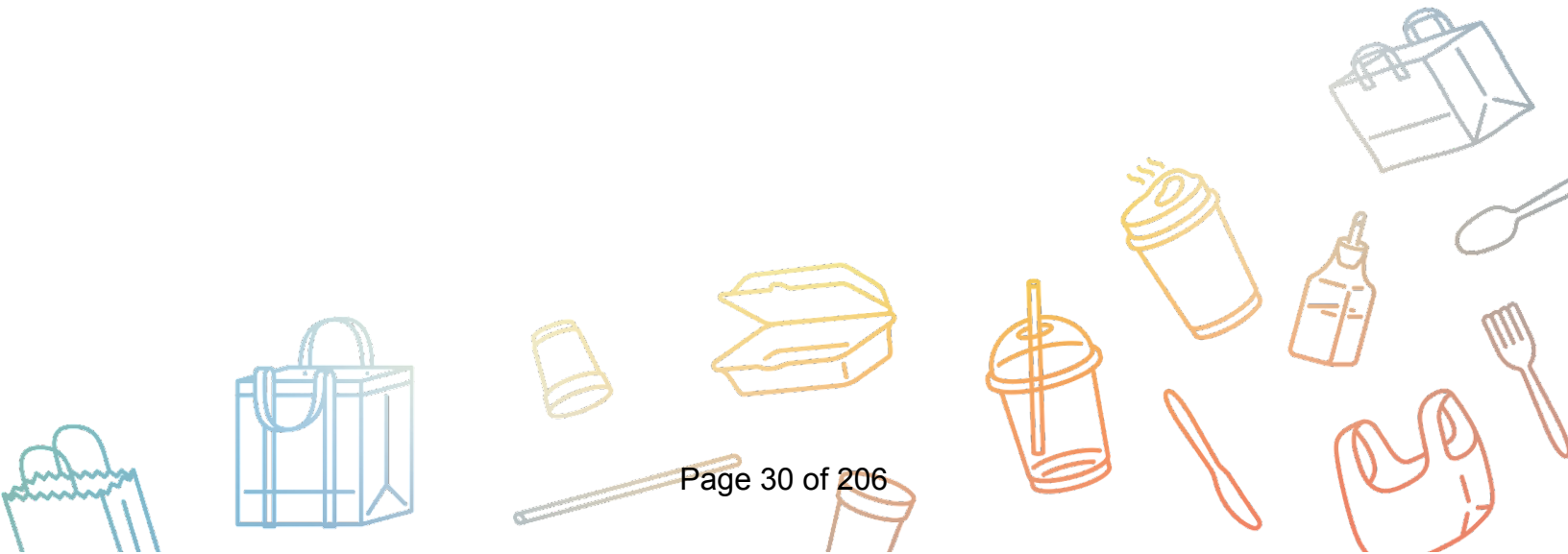
## Targets

The City's overall waste reduction target is to reduce waste generation per capita by 20 per cent by 2044 (the duration of the 25-year Waste Strategy). While SUI represent a small portion of total waste generated, their quantity may reduce more rapidly than overall waste. Their reduction is an important first step in changing public attitudes around consumption and waste generation, and as such the targets for SUI reduction are accelerated compared to the overall targets set in Roadmap '24.

The following targets have been set for SUI reduction (where reduction is achieved by eliminating the items or transitioning to refillable/reusable formats):

- 10 per cent reduction in SUI per capita within two years of bylaw enforcement; and
- 20 per cent reduction in SUI per capita within four years of bylaw enforcement.

If the targets are not being met, Administration will revisit the SUI Plan and bylaw, and may propose further actions to increase the rate of reduction. Longer term targets will be set during the development of subsequent Waste Reduction Roadmaps.



# Appendices

Appendix A - SUI Plan Development Process
Appendix B - External Factors
Appendix C - Waste Hierarchy and the Role of Compostable SUI

# Appendix A - SUI Plan Development Process

Development of Edmonton's Plan to Reduce Single-use Items began in 2018 with public engagement in support of the development of Edmonton's Comprehensive 25-year Waste Strategy. A jurisdictional scan of best practices was complemented by the input of thousands of Edmontonians. Engagement results identified a public desire to bring Edmonton in step with internationally-recognized best practices in waste, including putting more emphasis on waste prevention and programs that promote waste reduction.

On September 10, 2019 Council approved the 25-year Waste Strategy which describes policy and service changes that will reduce waste, increase waste diversion and improve service delivery, grounded by a Zero Waste Framework.

An outcome from the 25-year Waste Strategy was the development of a Waste Reduction Roadmap, which was approved in May 2021. The development of the Waste Reduction Roadmap gathered feedback through three rounds of public and stakeholder engagement. The Roadmap reflects thoughtful and passionate concerns, feedback and suggestions from residents and stakeholders for the City to identify actions to reduce waste and mechanisms to measure their performance. Ten actions were outlined in the Roadmap to be implemented over the next three years. The development of a plan and bylaw to reduce SUI was identified as a priority action.

An expanded and updated jurisdictional scan identified best practices in SUI reduction, both locally and globally. The findings showed that a large majority of local governments have started banning plastic bags and styrofoam, but few have gone farther to eliminate or restrict other single-use items like cups, straws and containers. Those that have gone further typically use policy levers such as fees and by-request provisions, rather than bans.

A multi-criteria policy analysis was conducted to identify the preferred mechanism to restrict each type of SUI. The policy analysis considered environmental, social, economic and technical factors. As a result of the analysis, a draft approach was released publicly in November 2021.

Using the draft approach as a foundation, the City conducted interviews and focus groups with businesses in late 2021. The groups were separated based on industry/business type to ensure comprehensive feedback. Seven focus groups, a workshop for national chains and ten interviews were conducted. Feedback showed that businesses from all sectors were in support of the proposed changes. Local businesses expressed some hesitations around implementation

timelines and concerns regarding customer reactions, while the larger companies have already experienced these changes in other jurisdictions, and indicated that their priority was receiving clear communication on the timelines and the specific restrictions that would affect them.

In December 2021, the Canadian government released draft regulations and the timeline for banning the import, sale and manufacture of specific plastic items. Edmonton's draft approach to reducing SUI was evaluated and updated in the context of those regulations. This review resulted in a change to Edmonton's approach to regulating plastic straws (to mitigate a conflict related to the proposed federal approach) and ensured that Edmonton's plan will have a robust impact both in advance of and following the implementation of the expected federal regulations.

# Appendix B - External Factors

## Extended Producer Responsibility (Provincial)

Extended Producer Responsibility (EPR) is an environmental policy approach under which producers have financial and/or physical responsibility for their products through to the post-consumer stage of the product life cycle. EPR shifts operational responsibility and the cost of managing product waste from municipalities and taxpayers to manufacturers, brand owners and retailers.

In early 2021, the Alberta government announced its intent to introduce an EPR framework that would apply to packaging and paper products, including single-use plastics. Enabling legislation was passed in late 2021, and regulations with further details are expected in late spring 2022. The transition to an EPR framework could begin between fall 2023 and spring 2024, and will take several years to fully implement. Edmonton's City Council and Administration have been advocating for EPR for many years and will continue to engage with the provincial government to ensure the regulations meet the needs of the City.

Administration will review the regulations and their impact on the SUI Plan and associated municipal bylaw. While the proportion of single-use plastics that are recycled may increase under the EPR framework, and the costs of recycling those items will be borne by producers, EPR regulations are not likely to lead to a reduction in SUI. Nonetheless, EPR regulations are expected to be highly complementary to the reduction actions defined by the City's SUI Plan.

## Federal Regulations on Single-use Plastics

Every year Canadians throw out over three million tonnes of plastic waste, about half of which is packaging and other non-durable items. Of the total amount thrown out, only nine per cent is recycled, four per cent is turned into energy, and one per cent (over 30,000 tonnes) enters the environment. The remaining 86 per cent ends up in landfills.

The federal government has drafted regulations to ban six single-use plastics: shopping bags, straws, stir sticks, cutlery, ring carriers and food serviceware made from plastics that are difficult to recycle. The government accepted public input up until March 5, 2022 and anticipates that the regulations will be finalized by the end of 2022. If the final regulations mirror the draft regulations, the manufacture and import of the targeted single-use plastics will be banned on the one year anniversary of the adoption of the regulations (by late 2023 at the

earliest), and the sale of the items will be banned on the two year anniversary (late 2024 at the earliest).

In addition to banning all single-use plastic shopping bags, straws, stir sticks, cutlery and ring carriers, the federal regulations will ban the use of single-use food serviceware that is made from polyvinyl chloride, plastic that contains a black pigment produced through the partial or incomplete combustion of hydrocarbons (colloquially referred to as "carbon black") and plastic that contains any additive that, through oxidation, leads to chemical decomposition or to the fragmentation of the plastic material into micro-fragments (colloquially referred to as "oxo-degradable"). While the City supports the expanded scope of the federal regulations, the municipal ban on serviceware will be limited to foam. Administration has considered the draft regulations in the development of this plan and proposed bylaw direction.

## Regulatory Trends

Nearly 100 local governments in Canada have enacted bylaws to prohibit or restrict SUI items. Most commonly, these regulations affect the sale and distribution of plastic bags, however several local governments have also enacted bylaws prohibiting or restricting other SUI such as plastic straws, styrofoam and takeout containers.

Globally, regulations on single-use items vary considerably in their comprehensiveness, with the majority of regulations focused on the elimination of foam and plastic bags. As of 2018, about 66 per cent of the countries in the world had regulated the distribution of free plastic shopping bags.[7]

Governments that have regulated single-use items use a range of approaches. The diagram in Figure B1 illustrates the types of approaches to regulating SUI that were identified in the jurisdictional scan conducted while developing this plan.

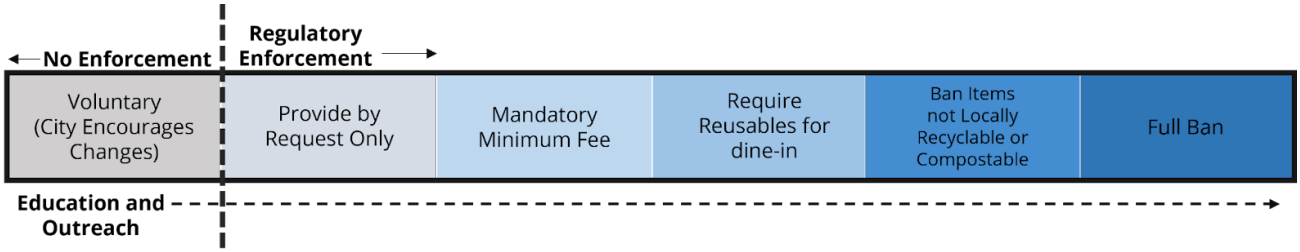



**Figure B1. Types of approaches to regulating SUI**

[7] Single-use plastic bags and their alternatives: Recommendations from Life Cycle Assessments

There is also mounting pressure from the international industry and business community to introduce a legally binding UN treaty on plastic pollution. Early discussions on the proposed treaty recognize the role plastics play in the economy, and the need to keep them out of the environment. Tactics may include reducing virgin plastic use, decoupling plastic production from fossil fuels, setting enabling conditions for a circular plastics economy to operate at scale, and developing a governance structure to ensure countries participate and comply.This action is significant because it is the first example of influential industry leaders advocating for a comprehensive and binding policy on plastic pollution. Industry's adoption of this position provides policymakers with a signal that industry is receptive to policies to reduce plastic pollution.[8]

# Industry-Led Initiatives

## Canada Plastics Pact

The Canada Plastics Pact (CPP) is a platform for multi-stakeholder collaboration and industry-led innovation that unites leaders in Canada's plastics value chain behind a common vision and ambitious goals to address plastic packaging waste at source. The CPP has set the following targets for 2025:

- Define a list of plastic packaging that is to be designated as problematic or unnecessary, and take measures to eliminate them;
- All plastic packaging designed to be reusable, recyclable or compostable;
- 50 per cent of plastic packaging is effectively recycled or composted; and
- 30 per cent recycled content across all plastic packaging.

By eliminating some types of plastic from the waste stream, the proper management of the remaining streamlined set of plastics can be more efficient and effective. Members of the CPP include major plastics producers and retailers such as Canadian Tire Corporation, Coca-Cola Canada, Colgate-Palmolive Company, Kraft Heinz Canada, Save-on-Foods, Unilever Canada and Walmart Canada.

The City of Edmonton, along with a small number of local governments and various not-for-profit organizations, is an implementation partner of the CPP.

[8] Businesses send powerful signal to UN on need for legally binding plastic pollution treaty

## Recycling Council of Alberta

The Recycling Council of Alberta (RCA) is a member-based organization with a mission to promote, facilitate and advocate for a Circular Economy in Alberta through waste reduction and resource conservation. The RCA prioritizes the elimination of problematic or unnecessary plastic packaging through redesign, innovation and new delivery models, and the reduction of single-use packaging through application of reuse models. The City of Edmonton is a member of the RCA.

## Voluntary Retailer Actions

Many retailers have implemented voluntary restrictions on checkout bags and other single-use items. Examples include the elimination of plastic checkout bags (including major retailers such as Sobeys and Walmart), fees for paper and reusable bags, elimination of straws, providing utensils by request only, elimination of styrofoam, and discounts for reusable cups and bags. Retailers who have implemented these changes ahead of the municipal plan and bylaw are leaders who recognize their power to drive change.

## Reusables as a Service

Businesses are emerging that focus on making reusables easy and affordable for both businesses and consumers. Using various business models, these innovators supply, manage and clean reusable containers in a cost effective manner. The emergence of these businesses indicates a growing demand for reusables as an alternative to disposables, and is an example of the creativity that can be harnessed to implement this plan. While these services are becoming increasingly common in large cities across North America and Europe, there are no such services in Edmonton at this time. The adoption of Edmonton's Plan to Reduce Single-use Items is expected to attract investment in models that increase access to reusable cups and takeout containers.

# Appendix C - Waste Hierarchy and the Role of Compostable SUI

As noted in the body of the SUI Plan, preference is given to eliminating or reducing SUI by using them only when necessary. After reduction, the next priority is given to replacing SUI with reusable alternatives. Switching to reusable items supports the development of a circular economy. A circular economy makes efficient use of resources by reusing products again and again before recycling them at the end of their useful lives. Any items that cannot be replaced with reusables should be recyclable in the local recycling system. Recyclable items that contain recycled content are also preferable, as they help to drive the establishment of viable recycling markets and limit the impacts of producing raw materials.

In some jurisdictions, certified compostable SUI are promoted as a solution. In Edmonton, the majority of the public and private processing facilities established to date are not able to effectively compost SUI, including those labeled as "certified compostable". In the case of compostable bags for organics, Edmonton determined that participation in the organics collection program would increase if certified compostable bags were allowed, because of the role they play in reducing the "yuck factor". The certified compostable bags are screened out and managed as contamination at the City's processing facilities. In addition to not being compatible with local processing facilities, certified compostable products typically have larger impacts than their conventional counterparts when considered on a life cycle basis, even if the compostable items are composted and the conventional items are landfilled.[9,10] This is due to the significant upstream/production impacts associated with compostable materials.

When recyclable alternatives are not available, SUI should be disposed of in the garbage stream (referred to as "residuals management" in Figure 1). Edmonton's waste processing system includes a facility capable of producing refuse derived fuel (RDF), which can be used to replace traditional fuels in cement kilns and other industrial applications. SUI that have not been eliminated, replaced with reusables, or recycled, and that are disposed of in the residential garbage stream can be used as feedstock to make RDF. SUI made of compostable materials and/or alternative plastics (oxo-degradable, photodegradable, biodegradable, and compostable, and which can be made from fossil resources or biogenic resources) are also suitable for RDF production.

---

[9] The Significance of Environmental Attributes as Indicators of the Life Cycle Environmental Impacts of Packaging and Food Service

[10] COMPOSTABLE – How well does it predict the life cycle environmental impacts of packaging and food service ware

# Recommended Bylaw Direction

## 1. Introduction

This document describes the proposed direction for a future bylaw to regulate single-use items in Edmonton. These recommendations were developed based on engagement input, GBA+ analysis, jurisdictional scans, and local market research, and reflect a balance of environmental ambition and practicality. These recommendations are subject to change based on feedback from Utility Committee and City Council, and with further legal review and bylaw drafting work.

## 2. Bylaw Approach

### 2.1. Structure

A dedicated bylaw addressing single-use items (SUI) is proposed. The SUI bylaw will reference the Business Licence Bylaw (Bylaw 20002) to identify responsible parties, but will not be directly integrated into the Business Licence Bylaw.

### 2.2. Applicability

The SUI bylaw will apply to any business licence holder, but not all categories of facilities and businesses require a business licence. Typically the facilities that are exempt from the requirement to have a business licence are regulated by other orders of government, such as the provincial government, and additional municipal licencing and regulation is either not permitted or would amount to unnecessary red tape.

The following business categories are relevant to the objective of reducing single-use items but are not required to have a business licence:

- Healthcare (e.g. hospitals);
- Continuing care/long-term care facilities, although private facilities require licencing as Residential rental accommodation (long-term), and restaurants on site may also be licenced;
- Pharmacies;
- Daycare/child care facilities that are provincially licenced (such facilities are not required to have a municipal business licence);

- Schools (this does not cover commercial schools, such as private career colleges, music schools, driving schools); and
- Community Leagues (the exemption does not apply to third parties that use Community League facilities to operate a business).

As with all City bylaws, focus will be placed on bylaw education and working towards compliance with businesses. Given the extenuating circumstances of COVID-19, phasing in of requirements and the use of discretion will be necessary when implementing this bylaw. This discretion will also extend to other future emergency situations/natural disasters.

### 2.3. Summary

The following table summarizes the key issues and recommended regulatory approach for each type of SUI considered by the proposed bylaw, in addition to the overarching goal of waste reduction that stems from Edmonton's 25-year Comprehensive Waste Management Strategy (Waste Strategy) and Edmonton's Waste Reduction Roadmap (Roadmap '24).

| SUI Type | Reason for Inclusion in Bylaw | Recommended Approach | Rationale for Recommended Approach | Example Support Programs for Residents |
|---|---|---|---|---|
| Shopping Bags | • Litter leading to habitat degradation<br>• Strong public support<br>• High levels of ownership of reusable bags (per survey data)<br>• Other jurisdictions have set precedent, including locally | • Ban on plastic shopping bags<br>• Fees on paper and new reusable shopping bags | • Eliminate most harmful form of bag litter<br>• Substitutes are readily available<br>• Incentivize waste reduction with fees on other bags | • Stores accept donations of bags<br>• Stores set up a system to let customers pay for an additional bag(s) for those who cannot afford fees<br>• Work with non-profit organizations to accept donations of reusable bags and make free reusable bags easily accessible |
| Polystyrene Foam Serviceware | • Significant contributions to litter and public | • Ban | • Substitutes are readily available | • Provide information about recyclable alternatives |

| | | | | |
|---|---|---|---|---|
| | realm waste<br>• Not locally recyclable<br>• Limited use<br>• Strong public support<br>• Other jurisdictions have set precedent, including locally | | • Set the stage for reusable cup and container services | • Support the establishment of reusable cup and container services |
| Foodware Accessories | • Often unnecessary/ unwanted by customer<br>• Not recyclable<br>• Some jurisdictional precedent | • Available on request<br>• Provide only the foodware accessories requested | • Eliminate "zero use" accessories<br>• Provide accessories when needed<br>• Substitutes are readily available | • Not required, as accessories will still be readily available |
| Single-use Drink Cups | • Significant contributions to litter and public realm waste<br>• High public interest in reduction and existing ownership of reusable cups (per survey data)<br>• Not locally recyclable<br>• Some jurisdictional precedent | • Require dine-in beverage orders at restaurants be served in reusable cups<br>• Require restaurants to accept customer cups for dine-in and takeout orders | • Reusable cups are readily available<br>• Set the stage for reusable cup services<br>• Regulations can be extended to other business types in the future | • Work with non-profit organizations to increase access to reusable cups |

## 3. Shopping Bags

### 3.1. Scope

The City intends to define the following items in the bylaw:

- Shopping Bags, to ensure the scope only captures the intended bags;
- Plastic Shopping Bags, to define the types of Shopping Bags that will be banned;
- Paper Shopping Bags, to define one type of Shopping Bag that will be permitted with a fee;
- Reusable Shopping Bags, to define another type of Shopping Bag that will be permitted with a fee.

Shopping Bags will be defined to differentiate them from other bags that may not currently have reasonable alternatives. Shopping Bags are used by customers to transport goods from a business, and include bags used to package takeout or delivery orders. Plastic bags used to contain bulk purchases (like produce bags) are not considered to be Shopping Bags.

The intent is to align the municipal bylaw with the draft federal regulations that seek to ban the manufacture, import and sale of select single-use plastics. Based on the description of "plastic" in the federal government's regulatory impact analysis statement, all types of plastic would be included in the definition of Plastic Shopping Bags. The federal regulatory impact statement notes that "…plastics can be created from a wide range of synthetic or semi-synthetic organic compounds and are formed from long-chain polymers of high molecular mass that often contain chemical additives. Different polymers can be manufactured using different compositions of petroleum products, plant-based starting material, or recycled and recovered plastics." [1] From this description, it appears that any and all types of Plastic Shopping Bags, including bio-plastic, biodegradable plastic, oxo-degradable plastic, photodegradable plastic, PLA (polylactic acid) plastic, compostable plastic, or plastic mixed with plant fibres, will be covered by the federal regulations, and therefore could also be covered by the municipal bylaw.

[1] Canada Gazette, Part I, Volume 155, Number 52: Single-Use Plastics Prohibition Regulations; accessed at https://www.gazette.gc.ca/rp-pr/p1/2021/2021-12-25/html/reg2-eng.html

Paper Shopping Bags are Shopping Bags made out of paper. In order to support circularity and markets for recycled paper products, the bylaw intends to require Paper Shopping Bags to contain at least 40 per cent recycled content.

Reusable Shopping Bags are Shopping Bags that are designed and manufactured for multiple uses, and primarily made of a material that can be washed or disinfected. While some bylaws specify a minimum number of uses, and require Reusable Shopping Bags to be machine washable, Administration proposes that Edmonton's bylaw be less prescriptive, to enable innovation.

### 3.2. Bylaw Requirements

The bylaw will prohibit business licence holders from providing Plastic Shopping Bags to customers.

The bylaw will only permit the distribution of specific types of Shopping Bags, and will apply the following mandatory minimum fees in an attempt to further shape consumer behaviour and reduce "new bags" overall:

- Minimum fee for each Paper Shopping Bag:
    - $0.15 in first year
    - $0.25 in subsequent years
- Minimum fee for each Reusable Shopping Bag:
    - $1.00 in first year
    - $2.00 in subsequent years

Revenue from the fees would not be remitted to the City, as the City does not have the authority to levy taxes of this nature. The bag fees are not anticipated to generate significant net revenue for business licence holders, based on the current costs of paper and reusable shopping bags.

### 3.3. Specific Exemptions and Clarifications

The definition of Shopping Bags has been proposed to specifically exclude certain types of plastic bags which are not Shopping Bags. For clarity, these excluded bags are:

- bags that are used to contain loose bulk food items such as fruit, vegetables, nuts, grains, or candy, or loose small hardware items such as nails and bolts;

- bags used to protect bakery goods that are not pre-packaged prior to the point of sale;
- bags used to contain or wrap frozen foods, meat, poultry or fish (alive or dead);
- bags used to wrap flowers or potted plants;
- bags used to protect newspapers or other printed material intended to be left at a customer's residence or place of business;
- bags used to protect clothes after professional laundering or dry cleaning.

Similarly, paper bags that have a surface area of 300 square centimetres or less are not considered to be Shopping Bags, and would therefore not be subject to the fee.

It is proposed that festivals and events that receive City permits will be subject to the ban on Plastic Shopping Bags. This will help festival and event organizers prepare for compliance with the upcoming federal bans. Due to logistical constraints, they will be exempt from charging fees on Paper Shopping Bags and Reusable Shopping Bags.

It is also proposed that non-profit organizations be given additional time to comply with the municipal ban on Plastic Shopping Bags, and have the choice to opt out of charging fees on paper and reusable bags. The additional time to comply with the Plastic Shopping Bag ban would be available to all organizations holding a non-profit organization business licence from the City of Edmonton. These organizations may receive donations of Plastic Shopping Bags from businesses who are unable to use up their supply within the standard transition period. In the spirit of waste reduction, it is preferable for those items to be used for their intended purpose before they are disposed of. The ability to opt out of charging fees for paper and reusable bags is intended to reduce residents' barriers to accessing services from non-profit organizations. However, non-profit organizations may choose to charge the designated minimum fees for paper and reusable bags in order to recover the costs of providing compliant bags.

The sale of plastic bags intended for use at a customer's home would be permitted under the bylaw, provided that they are sold in packages of multiple bags.

Businesses will be permitted to provide a Shopping Bag at no cost to a customer if the bag has been returned to the business for the purpose of being reused by other customers. This is intended to support charitable organizations and thrift stores who commonly use this practice to cut costs for their customers and reuse materials already in circulation. This practice will also help mitigate impacts on low-income Edmontonians, while still meeting waste reduction objectives.

## 4. Polystyrene Foam Serviceware

### 4.1. Scope

"**Food Serviceware**" will be defined to include things like clamshell containers, lidded containers, boxes, plates, bowls and cups that are used to contain prepared food and beverages.

"**Polystyrene Foam**" is the material colloquially known as Styrofoam®.

"**Prepared Food**" is intended to include food and beverages that are ready to be consumed without any further preparation.

### 4.2. Bylaw Requirements

The bylaw will prohibit business licence holders from using Polystyrene Foam Food Serviceware.

### 4.3. Specific Exemptions and Clarifications

The Polystyrene Foam Food Serviceware ban is not intended to apply to trays used to package uncooked meat, poultry, seafood, eggs, vegetables or other foods that require further preparation before they are eaten.

The City does not have the authority to regulate packaging used for Prepared Foods that are packaged and sealed outside of the City. However, Polystyrene Foam Food Serviceware is included in the draft federal regulations banning single-use plastics; therefore all Canadian makers of Prepared Foods are expected to be required to source alternate packaging in the near future, regardless of location.

The foam ban is not intended to apply to food vendors located in hospitals or community care facilities that serve prepared food to patients. If a food vendor in

such a facility has a business licence and sells Prepared Food to customers, the Polystyrene Foam Food Serviceware ban applies.

Non-profit organizations will be given additional time to comply with the municipal ban on Polystyrene Foam Food Serviceware. This additional time would be available to all organizations holding a non-profit organization business licence from the City of Edmonton. These organizations may need additional time to secure a supply of reusable or non-foam single-use replacements, and may also receive donations of Polystyrene Foam Food Serviceware from businesses who are unable to use up their supply within the standard transition period. In the spirit of waste reduction, it is preferable for those items to be used for their intended purpose before they are disposed of.

## 5. Foodware Accessories

### 5.1. Scope

"**Foodware Accessories**" are intended to include items such as single-use utensils, straws, stir sticks, splash sticks, cocktail sticks, toothpicks, pre-packaged condiments and napkins. These are items that some customers may need with some orders, but not necessarily all customers will need these items with all orders.

"**Utensils**" include but are not limited to spoons, forks, knives, sporks and chopsticks.

### 5.2. Bylaw Requirements

The bylaw will permit Foodware Accessories to be provided only in response to a customer request, or via a self-serve station.

Only the specific accessories requested may be provided.

The requirements apply to dine-in, drive-through, takeout and delivery orders, including those ordered through a third-party ordering and/or delivery service.

### 5.3. Specific Exemptions and Clarifications

The request for accessories may be customer-initiated or in response to a prompt from a server or other employee.

# 6. Single-use Drink Cups

## 6.1. Scope

The City intends to define the following items in the bylaw:

- "**Single-use Drink Cup**"
- "**Reusable Drink Cup**"

Single-use Drink Cup is intended to be defined as a cup made from any materials, used to serve a drink and ordinarily or customarily used for its intended purpose only once before being disposed of. Single-use Drink Cups may be used for either hot or cold drinks.

Reusable Drink Cup is intended to mean a cup that is made from durable materials that is able to withstand repeated washing, sanitizing and use. Reusable Drink Cups may be used for either hot or cold drinks.

## 6.2. Bylaw Requirements

The recommended approach to regulating cups has multiple parts, as no one solution is able to shift customer behaviour and achieve the intended environmental objectives. Furthermore, Administration recognizes the critical need for exemptions and support programs to mitigate impacts on equity-seeking groups. This section describes the proposed bylaw requirements, and the following section describes proposed exemptions. Support programs will also be developed in consultation with equity-seeking groups once Utility Committee and City Council provide direction on the bylaw.

The first part of the bylaw is intended to address the use of Single-use Drink Cups for dine-in orders in restaurants. In compliance with existing AHS permits, restaurants would be required by the bylaw to serve all beverage orders that are intended to be consumed on site (i.e. dine-in orders) in Reusable Drink Cups. This would apply to establishments that hold restaurant and food service business licences, but would initially exclude establishments that also hold other specific business licence categories, such as spectator entertainment (e.g. movie theatres, arena/stadiums and live music venues). The requirement would not apply to food courts or food halls, where orders are consumed in a common area that is not controlled by the restaurant and food service business licence holder. This

requirement could expand to apply to other business types over time, such as stadiums, movie theatres and other entertainment venues. The requirement to serve dine-in beverages in a Reusable Drink Cup would not apply to orders placed for takeout, drive-through or delivery.

The second part of the bylaw is intended to reduce barriers to customers bringing their own Reusable Drink Cups for dine-in or takeout orders. The bylaw would require restaurants to amend their policies and sanitation programs, if/as required, to accommodate customers bringing their own reusable cups for orders. The amended sanitation programs would need to comply with the requirements of Section 29 of the Food Regulation 31/2006 of the *Alberta Public Health Act* and Section 3.6.6 of the Alberta Health Food Retail and Foodservices Code 2003 (Amended June 2020). Sanitation programs should clearly articulate the conditions under which customers' reusable cups may be refused, such as when cups are cracked, chipped or corroded; when cups appear to be inappropriate in size, material or condition for the intended beverage; or when cups appear to be soiled or unsanitary. Alberta Health Services (AHS) has indicated a willingness to be involved in developing the criteria for cup acceptance. Recognizing that customer-supplied reusable cups may not be compatible with drive-through operations, the requirement to accept customer-supplied reusable cups will apply to dine-in orders and takeout orders that are placed inside the restaurant. Spectator entertainment licence holders are currently intended to be exempted from this requirement in order to maintain security of their venues. Convenience stores are also not proposed to be included at this time.

At this time, Administration is not recommending that fees be charged on single-use drink cups. There are two main reasons fees are not currently recommended:

- Fees would be retained by businesses, and there is no mechanism for the City to require that fees to be used to support sustainability programs or to provide social benefits; and
- Customers, including equity-seeking groups, may be burdened by repetitive fees in situations where there are no viable alternatives to single-use drink cups currently in place (e.g. drive-through).

Other jurisdictions in Canada have either implemented or are expected to implement a fee on single-use cups. Administration recommends that the impact of cup fees in

these jurisdictions be observed, with particular attention to the actual waste reduction and GBA+ outcomes of such fees, before considering a fee in Edmonton. Positive impacts of cup fees could include a reduction in single-use cups, and the establishment of alternatives, such as cup-share services. Negative impacts of cup fees could include lack of accountability for the revenue from fees, lack of single-use cup reduction due to the number of scenarios where a fee will have limited impact because reusable cups are difficult to accommodate (e.g. drive through, convenience stores, entertainment venues), and disproportionate impacts on low-income individuals and other equity-seeking groups who may not have easy access to appropriate reusable cups. If the cup fees are determined to have an overall positive impact, Administration may return with recommendations to amend the SUI bylaw. If fees are recommended in the future, Administration will engage with equity-seeking groups to develop appropriate support programs before the new bylaw is enforced.

The suggested bylaw direction related to single-use cups could also be expanded in the future to include a requirement for Single-use Cups to be compatible with diversion programs. This requirement is not recommended at this time, as the scope and timing of the provincial Extended Producer Responsibility (EPR) regulations is not yet known. It is anticipated that single-use drink cups will be included in EPR regulations, and as such, opportunities to recycle cups will increase.

### 6.3. Specific Exemptions and Clarifications

The bylaw requirements for cups are intended to focus on traditional restaurants, including those that offer takeout and fast food. Specific Business Licence categories, to be determined at a later time, will be exempted from the requirements. Initially exempted businesses may be included in the requirements at a later date, once practical considerations are addressed. This could require a bylaw amendment.

In addition, some establishments with food handling permits from AHS are restricted to offering customers “single-use utensils/items only” as a condition of their permit. The requirement to provide reusable cups at establishments with that condition on their food handling permit is proposed to be phased in over an extended period, longer than the proposed one year transition period for other portions of the bylaw, to ensure adequate time for these business to prepare to comply with the bylaw and secure an updated permit from AHS. AHS has indicated willingness to work with the City on this.

COUNCIL REPORT

# MULTI-UNIT STRATEGY - ALTERNATIVE BUSINESS MODEL

## RECOMMENDATION

That Utility Committee recommend to City Council:

1. That Waste Services provide mandatory three-stream communal collection, with mandatory co-location for disposal of each waste stream as outlined in the March 25, 2022, City Operations report CO00581rev.
2. That the Communal Collection Diversion Rate Calculation Methodology as set out in Attachment 2 of the March 25, 2022, City Operations report CO00581rev, be approved.
3. That capital profile 23-81-2054, Three-stream Communal Collection, as set out in Attachment 3 of the March 25, 2022, City Operations report CO00581rev, be approved.

### Report Purpose

**Council decision required**

Council is being asked to approve a transition to mandatory three-stream communal collection, a communal collection diversion rate calculation methodology and the Three-stream Communal Collection capital profile.

### Previous Council/Committee Action

At the June 25, 2021, Utility Committee meeting, the following motion passed:

> That the Business Case and cost of service study for Residential Communal Collection be referred back to Administration to provide an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model along with a robust data sharing and accountability framework to ensure that diversion targets contained within the 25 year waste strategy are met.

### Executive Summary

- Edmonton's 25-year Comprehensive Waste Management Strategy (Waste Strategy) defines a path of ambitious, transformational change toward a zero waste future, with a target of 90 per cent waste diversion across all sectors.

## MULTI-UNIT STRATEGY - ALTERNATIVE BUSINESS MODEL

- Approximately 167,000 homes receive the City's communal collection services across almost 3,400 properties. The introduction of three-stream source separation (organics, recycling and garbage) for residents receiving communal collection is one of the next steps in the Waste Strategy and is necessary to ensure the entire residential sector has equal access to source-separated waste collection.
- In June 2021, Administration presented a business case for a mandatory three-stream source separation program for communal collection. Administration was directed to prepare an updated business case that includes "an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model."
- Offering choice and price competition through private services under a regulated utility is not contemplated under the *Municipal Government Act* (MGA). Privatizing services would limit the City's ability to regulate the service. Franchising could be an option to provide regulatory oversight but this approach would not be consistent with "privatization" and market freedom.
- Administration developed options that assume the City could provide regulatory oversight in a number of areas, including managing rates; source separation requirements and appropriate disposal of waste streams; container provision; and defining parameters that would impact contracts between service providers and customers.
- The recommended option is Alternative 5 (City Managed Services) because it has the highest total score in the business case analysis, presents the lowest risk and has an acceptable Net Present Value (NPV).
- By diverting waste from landfill and expanding three-stream source separation to the remaining residences in Edmonton, the recommended Alternative supports the City Plan's Big City Move to be Greener as We Grow and contributes to Council's strategic goal of Climate Resilience.

## REPORT

Edmonton's Waste Strategy defines a path of ambitious, transformational change toward a zero waste future. A critical element of that path is a target of 90 per cent waste diversion across all sectors in Edmonton, with clear recognition that reaching that target will require the implementation of three-stream source separation in every sector.

Approximately 167,000 homes receive the City's communal collection service, through which residents of almost 3,400 multi-unit properties, like apartments and condominiums, dispose of waste in shared waste containers. The introduction of three-stream source separation for residents receiving communal collection, who are expected to represent a growing proportion of the City's overall population, is the next step in the path outlined by the Waste Strategy. This approach will also ensure the entire residential sector has equal access to source-separated waste collection services.

### Business Case for Three-Stream Communal Waste Collection

In June 2021, Administration presented a business case for a mandatory three-stream source separation program for multi-unit residential properties that receive communal collection (June 25, 2021, City Operations report CO00581, Multi-Unit Strategy). This business case recommended

a program alternative that was assessed as the most appropriate option to meet the needs of residents and property managers, as well as the objectives of the Waste Strategy.

In response to the business case, a number of stakeholders representing individual multi-unit properties and the multi-unit property management industry, reiterated a desire to opt out of the City's Waste Utility. They asserted that the regulated utility model was preventing some multi-unit properties from achieving cost savings by restricting their ability to secure a private contractor for waste services. Leveraging a previous report on the matter (April 30, 2021, City Operations report CO00391, Multi-Unit Program Development Update), and with advice and guidance from the independent Utility Advisor, Utility Committee clarified that there is no effective mechanism for properties to opt out of the utility; the only mechanism to enable some multi-unit properties to opt out of City waste services is to deregulate the entire communal collection service.

As part of the debate about the potential outcomes of deregulating communal collection services, members of Utility Committee, the stakeholders advocating for private waste services and a number of private waste service operators all confirmed a belief that any alternative model for waste services to the multi-unit sector should continue to align with the ambitious waste diversion targets defined by the Waste Strategy.

Recognizing this shared commitment to the objectives of the Waste Strategy, but aiming to fully analyze the other potential impacts of options for privatizing some services, Utility Committee directed Administration to update the business case to include "an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model." The resulting business case is presented as Attachment 1.

Administration sought to clarify the intent of the motion through meetings with members of Utility Committee. For absolute clarity, Administration identified the outcomes to be achieved through the development of an updated business case, and developed a series of definitions (outlined in Section 3.1 of Attachment 1) to establish a clear interpretation of the motion. A notable constraint to the work conducted in response to the motion stems from the lack of a legal mechanism to regulate privatized services under a utility model, despite the motion specifying that the management of waste from properties receiving communal collection should remain within the Waste Utility (a contradiction that is addressed in more detail in Section 5.1 of Attachment 1).

As per the motion passed by Utility Committee, and although not contemplated by the *Municipal Government Act* (MGA), this business case assumed that it would be possible to regulate fully private services at a level equivalent to those currently in place through the Waste Utility, and assumed that, if services were to be fully privatized, the Waste Utility would be able to direct aspects such as:

- The number of waste streams collected and separately disposed of;
- Service levels (e.g. collection frequency, volume limits and collection of items dumped illegally beside bins);
- Program requirements, such as co-location of collection containers; and

- Service rates charged to customers.

Building from these assumptions, Administration developed a range of options defining a variety of ways the Waste Utility could manage rates, govern material flow and container provision, and define parameters for contracts between service providers, customers and the City. Options were developed for four categories of service provided to communal collection customers: collection; container provision; processing; and education and outreach.

### Options Analysis

The options analysis used a two-stage approach, as outlined in detail in Section 7 of the business case. In the first stage, a list of detailed options were evaluated across a range of criteria, with the status quo for each service category scoring higher than any of the privatization options.

In the second stage of analysis, a condensed range of options were evaluated in terms of their cost and risk. This condensed range of options was then further consolidated into complete "packages" built to define logical solutions for delivering the full suite of waste services to communal collection customers. Following the elimination of packages that were logically inconsistent (e.g. City-provided collection and processing with privately operated education and outreach), the five remaining packages were identified as viable alternatives. These viable alternatives were evaluated in terms of their cost and risk, for the purposes of making a program recommendation. Those five viable alternatives are described in the table below.

| Alternative | Alternative Description |
|---|---|
| 1. Full Privatization | All services privatized. |
| 2. Privatization with City Processing | Processing and disposal managed by the City, all other services privatized. |
| 3. Privatization with City Education | Education and outreach is managed by the City, all other services privatized. |
| 4. Private Collection and Containers | Processing, disposal and education and outreach are managed by the City. Collections and container provision is privatized. |
| 5. City Managed Services (Status Quo) | All services are managed by the City (Equivalent to the recommendation in the June 2021 Business Case for Residential Communal Collection). |

Cost Analysis

Based on a lack of available information about the potential costs for privatized services, only the Capital and Operating savings and costs for the City were evaluated for the alternatives, including the stranded costs that would need to be managed with privatization. This means that the cost of replacing services that are no longer provided by the City, for each alternative, are unknown and unaccounted for in this analysis (and that any alternatives with a lower cost will only represent a

true savings to residents if the private cost of replacing lost service is less expensive than the incremental reduction in City costs).

The table below outlines the difference in Net Present Value (NPV) per unit per month between Alternatives 1 through 4 and Alternative 5, as well as the services provided by the City for each alternative (and therefore the gaps in service that must be replaced by multi-unit properties). The values represent the increase or decrease in the utility cost for ratepayers compared to Alternative 5. As noted, privatized services would need to be secured at an unknown cost.

| | **Alternative 1** Full Privatization | **Alternative 2** Privatization with City Processing | **Alternative 3** Privatization with City Education | **Alternative 4** Private Collection and Containers | **Alternative 5** City Managed Services |
|---|---|---|---|---|---|
| **Utility Cost Increase/ Decrease Compared to Alternative 5** | $0.29 /unit/month **more** than Alternative 5 | $2.41 /unit/month **less** than Alternative 5 | $0.56 /unit/month **more** than Alternative 5 | $2.14 /unit/month **less** than Alternative 5 | - |
| **Privatized Serviced (Services that Properties Would Need to Secure)** | •Collections<br>•Processing<br>•Container Provision<br>•Education and Outreach | •Collections<br>•Container Provision<br>•Education and Outreach | •Collections<br>•Processing<br>•Container Provision | •Collections<br>•Container Provision | None |
| **Utility Services Included** | None | •Processing | •Education and Outreach | •Processing<br>•Education and Outreach | •Collections<br>•Processing<br>•Container Provision<br>•Education and Outreach |

Based on the analysis completed, properties receiving communal collection services would need to secure waste collection services and waste containers, for less than $2.14/unit/month (Alternative 4), or collection, containers, and education and outreach for less than $2.41/unit/month (Alternative 2) in order to realize a savings over the alternative where the full range of services is provided by the City through the existing regulated utility model (Alternative 5). Alternatives 1 and 3 would actually result in an increased cost to the Utility and its ratepayers, although the services provided would be reduced. This is due to the stranded costs associated with the City's assets that would need to be retained so that the Utility can continue to serve its curbside collection customers. Examples of these assets and costs include vehicles, buildings, containers, human resources and capital loan repayment fees.

Assets that solely support the communal collection properties may not be retained, but as there is no established market identified, these assets are also considered a cost to the rest of the Utility as a result of privatization. Should privatization occur, recuperation of these costs will

require future resolution. For the privatization options, properties currently receiving communal collection services would still need to source these services from the private sector at an additional cost borne directly by them.

Risk Analysis

A comprehensive risk register was developed to assess the risks for each viable alternative and can be found in Appendix I of the business case. A Risk Score, reflecting the total risk avoided by an alternative relative to a common baseline of potential risk, demonstrates the relative risk potential of each alternative. A higher score indicates that more risk is avoided.

| | **Alternative 1** Full Privatization | **Alternative 2** Privatization with City Processing | **Alternative 3** Privatization with City Education | **Alternative 4** Private Collection and Containers | **Alternative 5** City Managed Services |
|---|---|---|---|---|---|
| **Total Risk Avoided** | 889 | 958 | 1,005 | 1,074 | 1,248 |
| **Total Possible Risk** | 1,625 | | | | |
| **Risk Score** | 55% | 59% | 62% | 66% | 77% |

## Recommended Alternative

The preferred alternative is Alternative 5 (City Managed Services) because it has the highest total score in the first stage of analysis, presents the lowest risk and has an acceptable NPV. Alternative 5 avoids risks related to:

- Achieving the waste reduction and diversion targets of the Waste Strategy;
- The City's inability to effectively or affordably regulate rates, service outcomes, and waste processing and disposal; and
- Inequitable service outcomes for some multi-unit properties and residents.

Alternative 5 is the only alternative for which a diversion rate can be estimated since there is currently insufficient private processing capacity to manage all of the recycling and organics generated by communal collection customers. Alternative 5 also combines the options which would provide the City with the highest chance of achieving the objectives outlined in the 25-year Waste Strategy and be in alignment with Council's strategic goal of Climate Resilience.

Although Alternative 5 does not have the lowest Net Present Value (NPV), these values only assess the revenue requirement for the Waste Utility. Recognizing that the cost reduction on the utility rate (calculated on a per-unit per-month basis) for Alternatives 2 and 4 are marginal, it is clear that not all properties receiving communal collection can be expected to realize cost savings from service privatization. For example, small and mid-sized properties, and/or properties with limited capacity and bargaining power to secure private contract(s), and/or those that are difficult

or inconvenient to serve, may face increased costs if the utility stops providing those services, leading to potential inequity for residents in the multi-unit sector.

Given the significant risks and indeterminate benefits of privatization, it is particularly important to note that privatization cannot be reversed in a short timeframe and without significant future investment and impact to ratepayers. If waste services to communal collection customers are privatized, it will not be viable to re-establish a utility model in the foreseeable future for communal waste customers, if the anticipated outcomes of privatization are not realized.

In addition, Administration expects that if some or all of the services are privatized, elements that are key to the success of the program, as highlighted in the business case, would change, resulting in an overall change in the program and its results.

### Addressing the Concerns of Stakeholders in Support of Privatization

The City continues to make progress on a number of the concerns that stakeholders have raised.

Costs

After years of change and unstable rates, ratepayers now benefit from stable and consistent utility rates that are forecast to continue. In 2018 and 2019, annual rate increases aligned closely to inflation, as measured by the Edmonton Census Metropolitan Area Consumer Price Index (CPI). The 2020 utility rate was reduced well below the CPI to 0.3 per cent, followed by a zero per cent utility rate increase in both 2021 and 2022.

In 2023, Administration will conduct a new cost of service study to assess progress in addressing the recommendations of the 2017 cost of service study and ensure that the utility's expenses are fairly apportioned following the wind-down of the City's commercial collection services and the introduction of a new service model for curbside collection customers.

System Performance

Although facility issues, including the early closure of the Edmonton Composting Facility in spring 2019, have limited the City's ability to meet waste diversion targets, the City has addressed many deficiencies and waste diversion rates have improved in recent years. In 2022, additional work to upgrade the City's Materials Recovery Facility and to market Refuse Derived Fuel to a more diverse range of partners will help divert even more waste as early as 2023.

Service Flexibility

Although the utility model is less able to address the unique service needs of individual properties receiving communal collection, the City remains committed to exploring service innovation to best meet the needs of new developments while upholding commitments to safety, service efficiency, waste reduction and diversion.

## MULTI-UNIT STRATEGY - ALTERNATIVE BUSINESS MODEL

The City's current service model, which includes significant private sector participation through competitively awarded service contracts, is a strong base upon which to introduce more flexible servicing options in collaboration with the private sector, as doing so becomes feasible.

### Communal Collection Diversion Rate Calculation Methodology

Administration has developed a Communal Collection Diversion Rate Calculation (Attachment 2) which is based on the previously approved methodology for the curbside program (June 8, 2018, City Operations report CR_5824). The curbside methodology is based on the Residential GAP - Manual on Generally Accepted Principles for Calculating Municipal Solid Waste System Flow (2003). Beginning in 2023, Administration will use this calculation to report the communal collection diversion rate.

### Next Steps

Section 13.1 of the business case outlines an implementation approach for the recommended alternative. Preparation would begin in 2022 to ensure that three-stream collection can be delivered, in phases, beginning in late 2023 or early 2024.

If City Council directs Administration to pursue privatizing or franchising of some or all of the waste services provided to communal collection customers, City Council direction is required to indicate:

- Whether the implementation of the three-stream source-separated program should be paused until a final decision regarding privatization is made; and
- Whether a fully private model with a newly developed, limited regulatory framework or a franchise model that establishes a new, parallel waste utility is preferred. Under a franchise model, a new waste utility would operate alongside, but separate from, the current Waste Utility.

Pending the direction from City Council, Administration would then prepare further analysis as described in Section 13.2 of Attachment 1 and present recommendations in the future.

## Budget/Financial Implications

Administration is requesting funding for the residential waste collection program under capital profile 23-81-2054 (Attachment 3) reflecting Alternative 5 (City Managed Services) to commence procurement of vehicles, containers and other equipment required to start program implementation in 2023. Due to global supply chain challenges, procurement requires longer lead times and therefore funding approval is requested in advance of the 2023 to 2026 budget to ensure that orders can be placed in 2022 to meet 2023 implementation requirements. The recommendation will require capital expenditures of $10.4 million between 2023 and 2025 for the purchase of organics and recycling containers to be used for source separating waste, fleet vehicles and other related expenditures. Over the complete 24-year life cycle of the program, a total of $29.0 million in capital funding and $93.5 million in operating and maintenance costs are required. These costs are to implement the program changes recommended in the business case.

## MULTI-UNIT STRATEGY - ALTERNATIVE BUSINESS MODEL

The rate impact of a new program will be presented in the 2023 Utility Rate Filing, pending a program decision by City Council. Any capital and operating impact is expected to be mitigated or entirely addressed within the utility rate increases previously forecast in the 2022 Utility Rate Filing. A summary of the net staffing impact, reflecting an effort to realign existing resources based on an assessment of the systems impact of an approved program change, would be presented at the same time.

If City Council directs Administration to pursue the privatizing or franchising of some or all services, significant additional work will be required to develop accurate cost estimates, a transition plan to minimize stranded costs, and funding mechanisms to address changes to the remaining Utility's revenue requirements (e.g. an exit fee or tax subsidization). Once this additional analysis is completed (along with the analysis of other non-financial considerations outlined in Section 13.2 of the business case), a final decision could be made and an implementation approach could be developed.

### Legal Implications

If City Council directs Administration to pursue the privatizing or franchising of some or all services, further research would be required to evaluate the extent to which an accountability and enforcement framework could be implemented for the selected model. This information will enable City Council to more accurately assess and mitigate the risks of non-compliance that are expected from the privatized or franchised model before a transition is approved and initiated.

## COMMUNITY INSIGHT

Public engagement to inform the original business case for a mandatory three-stream communal waste collection program was conducted in two phases in 2020 and 2021, with input from property managers, developers, haulers, processors, condo board members and residents. What We Heard Reports for this engagement were provided as attachments to the June 25, 2021, City Operations report CO00581, Multi-Unit Strategy.

Although it was not feasible to conduct broad public engagement during the development of this revised business case, the City contacted various private waste collection and processing companies in the region to solicit information to help inform the analysis of options for privatizing services. Very few haulers and processors responded to the provided questionnaire and, of the responses received, many were incomplete and did not provide the level of detail required to complete the analysis in a comprehensive manner.

Additional engagement to address the shortcomings of the voluntary questionnaire and to engage other service stakeholders, including the residents who rely on the service, would be essential to adequately consider the potential impacts of any options for privatization.

Should City Council direct additional work to consider some form of privatization, Administration would also aim to compile community insights relevant to:

- Curbside collection customers and property owners who may be impacted by required efforts to address the financial impacts of privatization; and

- Regional and non-residential waste stakeholders who may be impacted by increased competition for waste collection services and waste processing capacity.

If a privatized model for communal collection services is pursued, significant additional engagement should also be considered to assess if and how the City can continue to achieve the desired outcomes associated with the additional implementation steps described in Section 13.3 of the business case.

## GBA+

The recommended alternative to implement a mandatory three-stream communal waste collection program has been developed with consideration for equity of service between the residential sectors, between different properties receiving communal collection and between residents with different identity factors such as level of environmental awareness, household size and whether residents own or rent the property.

If a privatized model for communal collection is implemented, there is no clear mechanism to ensure that a GBA+ framework will be similarly applied. If Council chooses to further investigate such an alternative model, additional work would be required to better understand and attempt to mitigate the expected outcomes for particular sites and residents.

## RISK ASSESSMENT

| Risk Element | Risk Description | Likelihood | Impact | Risk Score (with current mitigations) | Current Mitigations | Potential Future Mitigations |
|---|---|---|---|---|---|---|
| **If recommendation is approved** | | | | | | |
| Infrastructure & Assets | Increased source separation results in a requirement for additional waste processing capacity. | 5 - almost certain | 3 - major | 15 - high | Continuously update the models projecting changes to incoming waste streams to assess when additional capacity may be required. | Plan for, fund and secure additional system processing capacity through future business cases and rate filings, as required. |
| Infrastructure & Assets | Procurement of containers, vehicles, and other assets are delayed or significantly more difficult or expensive due to supply disruptions. | 4 - likely | 4 - severe | 16 - high | Work with contractors and suppliers to enter into contracts and plan procurements ahead of time. | Plan to implement over a longer period of time and stagger the procurement of assets. |
| **If recommendation is not approved** | | | | | | |
| Governance | The City of Edmonton is unable to privatize and regulate under the utility framework without franchising. | 5 - almost certain | 5 - worst case | 25 - extreme | City Council to decide on whether a fully private model or a franchise model is preferred. | Depending on a decision from City Council, further risk analysis and mitigation development is necessary. |

## MULTI-UNIT STRATEGY - ALTERNATIVE BUSINESS MODEL

| | | | | | | |
|---|---|---|---|---|---|---|
| Public Sphere | Different standards across the residential sector create inequity and compromise the momentum of the Waste Strategy. | 5 - almost certain | 3 - major | 15 - high | Develop a strong regulatory approach to achieve consistent standards across all sectors. | Accept the reality that different standards will exist and focus on the curbside customer base by finding ways to maintain high momentum. |
| Public Sphere | The desired outcomes of privatizing services are not met but privatization cannot be reversed. | 3 - possible | 5 - worst case | 15 - high | City Council and Administration to consider all possible solutions before privatizing services. | City Council to consider franchising before privatizing services. |
| Governance | Outcomes expected from privatizing services are not clear. | 5 - almost certain | 3 - major | 15 - high | Make assumptions and provide high level analysis in the business case. | City Council to provide a clear objective and purpose (cost, diversion, etc.) for privatizing services. |
| Information Systems & Technology | Key program metrics such as participation, diversion, etc. cannot be measured. | 4 - likely | 4 - severe | 16 - high | Have strong regulations for haulers operating within the City and accept risk for processors operating outside City boundaries. | City Council to advocate to the Provincial government for a landfill ban of organic and recyclable material.<br><br>Develop bylaw(s) to enforce an accountability framework under a completely deregulated service. |

## ATTACHMENTS

1. Three-stream Communal Collection: Business Case for Service Privatization Options Within a Regulated Utility
2. Communal Collection Diversion Rate Calculation Methodology
3. Capital Profile 23-81-2054 - Three-stream Communal Collection

City of Edmonton
5th Floor Century Place
9803 102A Ave NW
Edmonton, AB T5J 3A3

edmonton.ca

# Three-stream Communal Collection: Business Case for Service Privatization Options Within a Regulated Utility

City Operations | Waste Services

City of Edmonton

*page intentionally left blank*

# Table of Contents

## Change History

| Version # | Date | Description |
|---|---|---|
| 1.0 | January 24, 2022 | • Complete first draft of business case sent for review to the Steering Committee and Waste Services Subject Matter Experts (SME). |
| 1.1 | February 2, 2022 | • Modified based on feedback from the Steering Committee and SME review.<br>• Added information about private versus franchising model regulation.<br>• Updated costs and assumptions.<br>• Sent to the Branch Manager and Legal Services for review. |
| 1.2 | February 10, 2022 | • Changes made to the Executive Summary, Section 3, Section 5 and Section 12 based on feedback from the Branch Manager, Steering Committee and Legal Services.<br>• Minor grammatical and wording changes throughout the document.<br>• Sent for signing. |

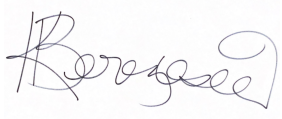
# Document Approval

Submitted By:

| Version # | Submitter Name | Signature | Submission Date |
|---|---|---|---|
| 1.2 | Vahid Rashidi, Senior Project Engineer, Communal Collection Program Development Project Manager, Waste Services |  | February 10, 2022 |

Reviewed By:

| Version # | Reviewer Name | Signature | Signing Date |
|---|---|---|---|
| 1.2 | Tony Colangelo, Supervisor of Communal Collection and Waste Drop-off Services, Waste Services |  | February 10, 2022 |
| 1.2 | Ryan Kos, General Supervisor of Business Strategy, Planning and Performance, Waste Services |  | February 10, 2022 |
| 1.2 | Mordecai Baba, General Supervisor of Collection Services, Waste Services |  | February 10, 2022 |
| 1.2 | William Johnston, Barrister and Solicitor, Legal Services |  | February 10, 2022 |
| 1.2 | Leslie Ostafichuk, Strategic Coordinator, Waste Services |  | February 10, 2022 |
| 1.2 | Sarah Wilmot, Senior Integrated Waste Policy Planner, Waste Services |  | February 10, 2022 |

| Version # | Reviewer Name | Signature | Signing Date |
|---|---|---|---|
| 1.2 | Renée Rudy, Senior Strategic Analyst, Waste Services |  | February 10, 2022 |
| 1.2 | Santosh Appukuttan, Finance Manager, Waste Services | Santosh Appukuttan | February 16, 2022 |
| 1.2 | Chris Fowler, Director of Collection Services, Waste Services | Chris Fowler | February 15, 2022 |
| 1.2 | Neil Kjelland, Director of Sustainable Waste Processing, Waste Services | Neil Kjelland | February 14, 2022 |
| 1.2 | Craig McKeown, Director of Business Integration, Waste Services |  | February 10, 2022 |
| 1.2 | Krista Berezowski, Director of Technical Services, Waste Services |  | February 11, 2022 |

Approved By:

| Version # | Approver Name | Signature | Signing Date |
|---|---|---|---|
| 1.2 | Jodi Goebel, Director of Waste Strategy, Waste Services |  | February 10, 2022 |
| 1.2 | Denis Jubinville, Branch Manager, Waste Services |  | February 11, 2022 |

## Executive Summary

Waste Services has operated as a municipal public utility since 2009. Benefits of the utility structure include mitigating risks inherent in major infrastructure development, incentivizing desired behaviours through variable rates, setting and enforcing consistent standards, providing all residents with access to the same level of service, and ensuring consistent adequate funding for City-wide facilities and services such as Eco Stations, Recycling Depots, and waste education programs.

The City currently provides communal waste collection to approximately 167,000 multi-unit households across almost 3,400 properties. Depending on the property location, collection services are provided by the City using City equipment and staff or by a contractor working on behalf of the City. Contractors collect garbage from approximately 70 percent of units and recyclables from approximately 50 percent of the units that have recycling collection service. Contracts for communal collection are awarded through a competitive bidding process.

All communal collection waste is delivered to the Edmonton Waste Management Centre (EWMC). Some of this waste is mechanically sorted before being further processed.

Edmonton's 25-year Waste Strategy (City Operations report CR_5829) was approved on September 19, 2019. The strategy requires transformational changes to Edmonton's waste management system in order to achieve an ambitious goal of 90 percent waste diversion across all sectors, including customers who receive communal collection. As part of implementing the 25-year Waste Strategy, the *Business Case for Residential Communal Collection* (City Operations report CO00581) was presented to Utility Committee on July 9, 2021 (meeting continuation of June 25, 2021). That business case compared options to increase the diversion rate for the communal collection sector and recommended that the communal collection service transition to a three-stream source-separated collection program.

After presentation and discussion of the business case, Utility Committee passed the following motion:

> *That the Business Case and cost of service study for Residential Communal Collection be referred back to Administration to provide an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model along with a robust data sharing and accountability framework to ensure that diversion targets contained within the 25 year waste strategy are met.*

The business case presented in this document has been developed in response to the above motion. It builds on the recommendations from the June 2021 business case by considering the privatization of elements of the communal collection program. The approach recommended in the June 2021 *Business Case for Residential Communal Collection* has been included for comparison against privatized services.

Privatization was considered for the following service categories of the communal collection

program:

- Collection;
- Container Provision;
- Processing; and
- Education and Outreach.

Administration examined the legal structure of utilities and options for privatization "within the regulated utility model". It was determined that privatization is incongruous with a utility. If a utility model is paramount, City Council is able to involve private companies in the communal collection program by using a franchise agreement. This would create a parallel utility alongside the City Waste Utility for communal collection. A franchised utility would facilitate greater regulatory control and oversight through the franchise agreement terms and conditions. However, as a franchised utility service, private market competition would be undermined. Alternatively, if privatization and market competition are paramount, regulations could be implemented through a bylaw and permit structure; however,the regulatory framework provided by the bylaw and permit would have a limited scope compared to the oversight available through a franchised utility. Under a bylaw and permit framework, it appears unlikely that the rate could be regulated. But, even if it is possible to regulate rates through conditions, this would be contrary to free market principles intended by privatization.

Waste Services sent a questionnaire to private waste haulers and waste processors, asking them to provide information about their current and future capacity, costs and reporting standards related to the above services. Despite following up and extending the response timeline, the City received very few responses. Due to the limited data provided by the private sector, Administration focused its analysis on the impact of privatization on investments made by the Waste Utility and the opportunities and risks privatization poses to stakeholders.

Options for the privatization of each service were evaluated in a multi-stage process. Upon completing the first stage of evaluation, the status quo options scored higher than any of the privatization options. Nonetheless, all options were included in the more quantitative second stage of analysis to give Administration additional confidence in the final recommendation. The second stage evaluated options in terms of net present value and risk. The net present value (NPV) analysis considered only costs to the City because accurate costs for the development and operation of privately funded services were not available. The risk analysis determined each alternative's risk potential and actual risk. Diversion rate projections were not included in the evaluation, due to a lack of reliable information about the future capacity and performance of private processing facilities.

Once the evaluation of the options was completed, comprehensive packages were built, covering the full suite of services. Every possible combination of options was generated, and five packages were determined to be viable alternatives (others were eliminated based on logical inconsistency, such as private collection with City-provided containers).

After evaluating risks, costs and stakeholder impacts, the recommended alternative is to maintain service provision through the City and its contractors (Alternative 5). This alternative earned the highest total score in the first stage of evaluation and had the lowest risk and an acceptable NPV in the second stage of analysis.

If the recommendation to select Alternative 5 is approved by City Council, preparation for implementation will begin this year with three-stream collection estimated to commence in late 2023 or early 2024. Implementing three-stream collection for properties receiving communal collection requires Waste Services to make property-specific decisions regarding container type, size, placement and collection frequency. The approach to implementation will be as described in the *Business Case for Residential Communal Collection* presented in June 2021.

If City Council directs Administration to pursue privatizing or franchising some or all of the services, it is expected that program elements identified as being critical for success in the *Business Case for Residential Communal Collection* would require additional work and consultation before making any final decisions.

# 1. Background

## 1.1. Historic Context

### 1.1.1. Establishment of the Waste Services Utility

Waste Services has been operated as a municipal public utility since 2009, following approval of a recommendation made in the March 4, 2008 Asset Management and Public Works Department report 2008PW0082. As defined by the *Municipal Government Act* (MGA), a "public utility" is a system or works used to provide specific services for public consumption, benefit, convenience or use. Waste management is explicitly listed in the MGA as one of the services which can be implemented through a public utility.

In the MGA a public utility is further divided into two categories: municipal public utilities and non-municipal public utilities. Municipal public utilities, such as Edmonton's Waste Services Utility, are operated by or on behalf of a municipality. These utilities are not subject to agreements that grant a right to another party to provide the utility service.

The benefits of the utility structure are largely a result of the creation of a predictable customer base and have been previously described (most recently in the April 30, 2021 City Operations Report CO00391) as follows:

- The risks inherent in the long-term planning and financing of major infrastructure are mitigated, supporting investments that enable responsible waste management and aggressive waste diversion targets;
- Waste sorting and reduction behaviors can be incentivized through the rate setting process, which is required to be revenue neutral (i.e. any revenue from behaviour-targeting fees or penalties can be reinvested by the utility for the benefit of ratepayers or returned to the entire customer base through future rate reductions);
- Consistent, community-wide standards for residential waste sorting can be reinforced by proactive and customer-centric education, outreach and service support;
- All residences regardless of size, location or complexity of service need, have access to the same service level; and
- All ratepayers contribute to the costs of, and can access, City-wide facilities and services such as Eco Stations, Recycling Depots and waste education programs. All ratepayers also contribute to the costs of managing the City's closed former landfill and the operations of the Edmonton Waste Management Centre (EWMC).

### 1.1.2. 25-year Waste Strategy

Edmonton's 25-year Waste Strategy (City Operation report CR_5829) was approved on September 19, 2019. The strategy describes transformational changes that will be required for Edmonton's waste management system to achieve an ambitious goal of 90 percent waste diversion. This goal applies to all sectors: residents receiving curbside collection, residents receiving communal collection, and the Industrial, Commercial and Institutional (ICI) sector. Achieving this goal will be a long-term process and will require full participation by all waste generators in the City.

The Waste Strategy describes a number of significant projects that will contribute to achieving

the 90 percent diversion goal. These include:

- The Edmonton Cart Rollout for curbside customers;
- Three-stream collection for properties receiving communal collection (i.e. multi-unit properties such as condos and apartment buildings);
- Improvements to waste processing;
- Waste reduction; and
- An ICI waste diversion program.

It is important to note that in 2019, City Council made a decision (aligned with a recommendation in CR_5829) that Waste Services should stop providing collection services to the Commercial sector. Instead, the City has been directed to develop a regulatory framework to support the achievement of the diversion target for the ICI sector. As a result of this decision, Waste Services has been winding down its contracts with commercial customers and ensuring measures are in place to avoid mixing the ICI and residential waste streams.

### 1.1.3. Collection

The City of Edmonton currently provides communal waste collection to approximately 167,000 households across almost 3,400 properties (such as apartments and condos). Up to two streams of waste (garbage and recycling) are collected from these properties. Currently, properties can opt into recycling collection. Approximately 64 percent of communal collection properties, representing roughly 84 percent of communal collection customers, have opted into recycling collection.

There is currently no limit on the quantity of waste collected from communal collection customers. While bins are collected on a regular schedule, additional collection is provided at no cost to a property if a bin becomes full between regular collection days.

The City is divided into four areas (named Areas 11, 12, 13 and 14) for the purpose of providing communal collection services summarized in Table 1 below. Collection services in each area are provided either by the City or by a contractor working on behalf of the City. Contracts are awarded through a competitive bidding process. The percentage of the units serviced by each service provider are provided in Table 2 below.

Table 1: City Communal Collection Areas

| Area | Number of Units (rounded to nearest 100) | Number of Properties (rounded to nearest 25) |
|---|---|---|
| 11 | 34,900 | 475 |
| 12 | 47,700 | 1,075 |
| 13 | 54,900 | 1,175 |
| 14 | 29,500 | 650 |

Table 2: Contractor Communal Collection vs. City Communal Collection

| Service Provider | Percentage of Total Units (Garbage) | Percentage of Total Units (Recycling and anticipated for Organics) |
|---|---|---|
| City of Edmonton | 30% | 50% |
| Private Contractor | 70% | 50% |

The City currently provides all communal collection containers. Minor maintenance requirements and bin delivery/retrieval services are provided by City staff. Major repairs and bin rehabilitation (e.g. painting and welding) are contracted out by the City to third-party service providers.

### 1.1.4. Processing

All waste from the communal collection program is delivered to the EWMC. Residential garbage arriving at the EWMC can be mechanically sorted at the Pre-Processing Facility (PPF) inside the Integrated Processing and Transfer Facility (IPTF). Recycling is sorted at the Material Recovery Facility (MRF). After being sorted into commodity streams (paper, cardboard, plastic, etc.), the material is then sold on the recycling market.

Other residential waste streams, including electronic waste and construction and demolition waste, are also processed at the EWMC by other companies who lease space for their processing facilities.

### 1.1.5. Drop-off Facilities

The City operates four Eco Stations, a Reuse Centre, Big Bin Events and 19 Recycling Depots, all of which can be used by communal collection customers to dispose of various waste items.

### 1.1.6. Education and Outreach

Waste Services offers educational events and tools to Edmontonians in all sectors. These include school programs, tours of the EWMC, the *WasteWise* mobile app and a printable *What Goes Where* poster. Waste Services currently has limited educational resources specific to communal collection and there are currently no education staff dedicated to supporting communal collection customers.

### 1.1.7. Diversion Rate

It is estimated that approximately 10 percent of communal collection waste was diverted from landfill in 2021. This figure represents the total volume of waste that was recovered out of the total volume of waste generated by residents receiving communal collection. It includes both the collection and processing aspects of the communal collection program as well as contributions from waste drop-off programs such as Eco Stations and Recycling Depots.

## 1.2. 2021 Business Case

The *Business Case for Residential Communal Collection* (Attachment 1 of CO00581) was presented to Utility Committee on July 9, 2021 (meeting continuation of June 25, 2021). The June 2021 business case compared source separation to centralized processing of mixed waste from communal collection customers and recommended that the communal collection service transition to a three-stream source-separated collection program.

Although centralized processing of mixed waste can result in diversion, the research showed this approach would be insufficient to achieve the long-term goal of 90 percent diversion. Furthermore, since both the Waste Strategy and the City Corporate Business Plan commit to a source separation program, continuing the status quo would be a departure from the approved direction of City Council.

The recommended alternative from the June 2021 business case is described in Table 3.

Table 3: Recommended Alternative from *Business Case for Residential Communal Collection*

| **Recommended Program** | |
|---|---|
| Three-stream source separation | Mandatory |
| Co-location of waste containers | Mandatory |
| Container types and sizes | Range of front load bin sizes for garbage and recycling.<br>Carts for garbage and organics. |
| Chute closures | Voluntary |
| Volume limits | Yes, with excess waste program |
| Dedicated education and outreach | Yes, during launch and ongoing |
| Potential diversion increase | 16% |
| Costs and Net Present Value (NPV)[1] | $29.2 million Capital<br>$91.0 million Operating & Maintenance<br>$-67.6 million NPV (over 24 years) |

Administration conducted comprehensive research to identify and evaluate potential program elements in order to develop this recommendation. Mandatory programs were both the most common and the most preferred approach identified in the jurisdictional scan. Mandatory

[1] Costs and NPV calculation for this Alternative have been updated and are presented in Section 9.

programs reinforce norms, standardize requirements and increase participation. The research showed that it is not feasible to achieve 90 percent diversion without universal participation in source separation programs. This means that all residents receiving communal collection must have access to, and participate in, separating their waste into recyclables, organics and garbage streams. Therefore, a mandatory service was recommended in the business case.

Both research and engagement show how important it is for residents to have equally convenient access to containers for the disposal of all waste streams. Equal access to all streams is referred to as co-location. Co-location means placing containers for garbage, recycling and organics next to each other in the same area or room. It also means that properties with garbage chutes require a mechanism to allow for the disposal of the other streams near the chute location on every floor. Co-location is in contrast to placing a garbage container or having garbage chute access in one location, with organics and recycling containers elsewhere. Co-location encourages participation in sorting and decreases contamination. The recommended alternative included provisions to make co-location mandatory.

Co-location can be facilitated by offering a variety of container types and sizes. Flexibility in container offerings will enable the City to work with property managers to "right size" the containers to suit the layout of each property. The use of smaller containers may also decrease opportunities for illegal dumping. The recommended alternative in the *Business Case for Residential Communal Collection* included a range of sizes of front load bins for garbage and recycling, and carts for garbage and organics.

Waste chutes are constructed in some properties to make waste disposal more convenient for residents. Chutes are typically used for garbage disposal only and the comparatively remote location of recycling containers is a barrier to recycling. However, closing chutes can be a significant undertaking and when co-location is made mandatory, closing chutes does not substantially change the expected diversion rate. Therefore, closing chutes was left as voluntary in the recommended alternative, with mandatory co-location still stipulating that containers for recycling and organics be provided adjacent to chutes if they remain open.

Setting volume limits motivates residents and property managers to participate in source separation programs and to reduce waste. Since the Edmonton Cart Rollout has also adopted volume limits (based on garbage cart size), the use of volume limits could be adopted in the communal collection program. An excess waste program could be developed to provide additional volume when required. All alternatives examined in the *Business Case for Residential Communal Collection* were based on the premise that volume limits would be enforced.

Research and engagement both revealed that dedicated education and outreach for property managers and residents are important for programs to succeed. A targeted and sustained effort with residents is required to overcome challenges such as resident turnover and anonymity. Campaigns should include a comprehensive mix of digital and traditional marketing tactics, as

well as face-to-face interactions. Property managers should be provided with resources to share with residents, access to dedicated customer support and ongoing education.

Finally, the business case noted that while an immediate increase in diversion would be expected, program maturity will require time and depend on a number of factors, including the City's ability to provide processing capacity and educational programs. Together, these factors will shift resident waste behaviours, leading to increased diversion from landfill and decreased contamination in the diversion streams.

When the June 2021 business case was presented to Utility Committee, haulers, landlords, and building owners indicated a desire for more private sector involvement in servicing the communal collection program. In response, Utility Committee passed the following motion:

> *That the Business Case and cost of service study for Residential Communal Collection be referred back to Administration to provide an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model along with a robust data sharing and accountability framework to ensure that diversion targets contained within the 25 year waste strategy are met.*

This business case evaluates options that could be implemented under the conditions described in the motion.

# 2. Constraints and Challenges

This section describes the constraints and challenges associated with developing this business case.

## 2.1. Constraints

The primary constraint impacting the development of this business case was the lack of information available from private haulers and processors. The City sent a questionnaire to both private haulers and processors, asking for information about current and future anticipated capacity, costs and reporting standards. Despite following up and extending the response deadline, the City received very few responses, which impacted the ability to accurately gauge the private sector's ability to collect and process each waste stream, and report on their activities with the level of detail that is required for the City to monitor progress towards the goals of the 25-year Waste Strategy.

Similarly, the lack of cost data provided means that the complete cost of service for communal collection customers, with privatization, cannot be forecast with sufficient confidence. The costs of privatization to the City can be calculated, but the cost of privatization to customers could not be included in the calculations. The costs presented for alternatives involving any degree of privatization are therefore not complete, or comparable to the costs of the status quo.

A secondary constraint impacting the development of the business case was the timeline for completing the work. In conjunction with the timing of the municipal election, the timeline

meant it was not feasible to conduct formal public engagement to inform the business case. If a privatization option is preferred by Council, public engagement is recommended prior to making a final decision based on the potential for significant impacts to residents and properties. Public engagement would also provide Administration with the confidence required to make a sound recommendation.

Another constraint was the result of the lack of fit between the standard procedures used to develop business cases, and the level of information available regarding the options under consideration. A strong business case can be developed when there is a clear program goal and well defined information for each alternative. In this case, the objective of the motion needed to be inferred, and accurate information for privatization options was not available. This means that the evaluation of cost and diversion impacts has been at a strategic level that does not meet the standard to which Administration would typically evaluate and make program recommendations.

## 2.2. Challenges

The following challenges were encountered while writing the business case:

- Significant work was required to interpret the motion due to the lack of specifics regarding the extent of privatization to be considered, and the incongruity between privatization and the structure of a utility.
- The scope of the work was very broad, and was defined to include waste collection and processing, container provision, and education and outreach.
- No other jurisdictions were identified that offered a fully privatized service within a regulated utility for residential waste collection. There were no reference cases to learn from or to base assumptions on.
- The scope of the City's role as a utility regulator, while maintaining a fully privately operated service, was difficult to define, as there were no other examples of this approach.
- It was difficult to project anticipated diversion rates for private processors since those facilities have not yet been proposed or developed. Further, Administration had no information on which to base reasonable assumptions about the type or capacity of future private processing facilities. These facilities would also be impacted by the potential future implementation of province-wide regulations, e.g. Extended Producer Responsibility (EPR), which are expected to set province-wide recovery targets for packaging, paper products and single-use plastics (PPP and SUP). While the introduction of EPR may drive the development of more processing capacity for some materials, insufficient detail is available at this time regarding the specific materials that will be included and the recovery targets. There is nothing equivalent planned at the provincial level to drive investment in organics processing capacity.

## 2.3. Opportunities

The development of the business case presented Administration with the following opportunities:

- Develop an understanding of the difference between franchising a utility versus contracting out services through the City versus privatization, as described in Section 3.1; and

- Provide various means for industry to provide information regarding collection and processing capacity and reporting capabilities to Administration, to be used in preparing a recommendation in the best interest of residents.

# 3. Initiative and Scope

## 3.1. Initiative Description

The work presented in this business case includes the development and evaluation of business models in which the private sector plays a larger role in delivering services to communal collection customers, within the context of a regulated utility model. Should privatization be pursued, there would also be a need to develop a data sharing and accountability framework that would allow the City to monitor progress towards its goals. Enforcement mechanisms and practices would also need to be developed and implemented.

The types of communal collection services that could potentially be privatized fall into four primary categories:

- Collection (three streams: garbage, recycling, organics);
- Container Provision;
- Processing (recycling, organics and potentially garbage, for the production of refuse derived fuel); and
- Education and Outreach.

The following definitions were developed to establish a clear interpretation of the motion:

- "Privately operated service" means a service in which contracts are between customers and the service provider they select. For example, this can mean contracts between property owners/managers and haulers, and contracts between haulers and processors. Privately operated services are in contrast to the status quo, in which the City delivers services using its own equipment and staff, and contracts private operators as agents of the City to deliver portions of the utility's residential waste collection services.
- A "regulated utility" means that the rates and services (including service standards) are approved and overseen by a governing body. In this specific case, the governing body is City Council. City Council relies on oversight and recommendations provided by the Utility Committee but retains ultimate authority over the waste utility.
- A "robust data sharing and accountability framework" involves the establishment and application of a strong and regular reporting methodology that allows the Utility regulator (in this case City Council) to track progress towards a set of established goals. The regulator must have the tools and resources to enforce compliance with the regulated service standards, to ensure progress towards the program objectives.

This initiative does not evaluate options for franchising communal collection service because the Utility Committee requested an expanded business case considering privatization. Privatization of an existing utility service is very different compared to franchising a utility service. Privatized services would not fall under the scope of the existing Waste Utility and would not create a separate utility. Franchising would continue the existence of a utility for communal collection services by granting an exclusive right to one or more entities to provide that utility service in accordance with a franchise agreement between City Council and a

franchisee. If communal collections were franchised, the result would be two utilities: one operated by a private entity delivering communal collection, the other operated by the City for curbside collection. The two utilities would operate independently and would not be accountable to each other. Each utility would be independently accountable to City Council.

The City does not currently grant a franchise to private entities to deliver waste services. Current City contracts with collection service providers are not franchise agreements. They are instead a means for the City, as the waste utility provider, to carry out part of the City's utility obligations. The difference is that a franchise agreement grants an exclusive right to an entity for them to create and operate their own utility service (subject to requirements specified in the franchise agreement) whereas a service contract between the City and a contractor results in the City retaining control over all aspects of the waste utility.

Privatization is different from franchising because any entity licensed to handle waste is free to compete for customers; no exclusive right exists to deliver the service. Under the status quo, only the City waste utility (i.e. Waste Services) is accountable and answerable to the governing authority (City Council); the City's collection contractor is merely a mechanism for the City to deliver its utility to customers and it does not answer to City Council as the utility regulator. With privatization, there is no utility and no private entity is subject to direct governance by City Council over rates and service levels.

In summary, a franchise agreement gives much greater control and oversight powers compared to privatization. Privatization provides less control than franchising because performance and regulatory constraints are imposed through a bylaw and permitting structure with conditions imposed on the permit holder. With privatization, business conduct would only be influenced through vigorous enforcement of bylaw requirements with fines and sanctions in a reactive manner. With privatization, no private entity would be directly answerable to a governing body controlled by the City such as Utility Committee.

From an external perspective, a switch to a franchise model may not make a significant difference to residents, assuming that a franchisee has sufficient equipment and resources to deliver services that are comparable to what the City currently provides. However, from an operational perspective, a franchise agreement would remove the City from its role as operator of the Waste Utility for any services described within the franchise agreement. If franchising was adopted, a new regulatory framework to oversee the private franchisee would be necessary to guard against potential abuses that can result from granting a monopoly over a utility service through a franchise agreement.

As per the motion passed by the Utility Committee, and although seemingly not permitted under the MGA, this business case assumes that it would be possible to regulate fully private services at a level equivalent to that of the current Waste Utility, including setting the rate.

## 3.2. Anticipated Outcomes

As noted above, the assumption is that modifications to the status quo City Waste Utility model for communal collection services would implement service parameters that drive diversion rates, such as volume limits, collection frequency, co-location of containers and the number of streams, and would be implemented as described in the business case attached to CO00581

through amendments to the Waste Services Bylaw. If privatization is implemented, it seems likely that amendments to the business licence bylaw or drafting a stand-alone bylaw would also be necessary. These changes would create a permit structure with conditions on private waste haulers to require that services be provided in a way that will lead towards the achievement of the goals of the 25-year Waste Strategy. A separate bylaw is not required if Waste Services delivers communal collection because Utility Committee can impose constraints through its powers of oversight and approval of strategy plans prepared by the City Waste Utility.

Parameters for increasing diversion through the communal collections program have been designed to achieve the following outcomes:

- Clear and consistent expectations, enforcement, outreach and education, resulting in a decrease in the amount of garbage set out by residents;
- Equity for residents between the curbside and communal collection programs;
- Cleaner feedstock for organic processing facilities, resulting in increased processing efficiency and a higher quality end product;
- Effective separation of recyclable materials from garbage to increase the amount of recyclables that can be processed and sold to end markets;
- Improved preprocessing at the IPTF due to reduced garbage volume;
- Improved production of refuse derived fuel (RDF) as a result of reduced moisture content in the garbage stream;
- Effective up front planning with regards to serviceability and optimal impact on usable space in new developments as a result of enforceable Developer Standards; and
- Improved responsiveness to the needs and constraints of complex developments, including mixed-use properties, where innovative design approaches are required to achieve serviceability and program outcomes without compromising city building outcomes.

Privatizing the service could impact the ability to achieve the anticipated outcomes both positively and negatively. Potential opportunities are highlighted in Section 5.3; risks are described in Section 10.

## 3.3. In Scope

Table 4 describes the scope for this business case.

Table 4: In Scope Items

| Component | In Scope |
|---|---|
| Customers | • All residential properties which are currently being serviced or will be served in the future by the communal collection program. This includes the residential units in properties that contain both residential and commercial units (referred to as mixed-use properties). |
| Collection | • Reach out to waste haulers to determine current activity, anticipated future capacity and ability to report at required level of detail; |

| Component | In Scope |
|---|---|
| | • Identification of preferred contract structure (between property and hauler, or between city and hauler); and<br>• Complete high-level research into the franchise model. |
| Container Provision | • Identification of preferred model for container provision (City provides no containers or City provides some or all containers). |
| Processing | • Reach out to processors to determine current level of activity, anticipated future capacity and ability to report at required level of detail; and<br>• Identification of preferred model for processing services (haulers choosing their own processing facilities or the City deciding which facilities haulers use). |
| Education and Outreach | • Identification of preferred model for providing education and outreach to communal sector residents and property managers. |
| Risk | • Evaluation of risks associated with various contract structures. |
| Financial | • Stranded costs analysis;<br>• Revenue requirement (RR) analysis for services remaining with the City (e.g. drop-off facilities); and<br>• Overall cost impact to residents analysis. |

## 3.4. Out of Scope

Table 5 describes the items that are managed separately and that are out of scope for this business case.

Table 5: Out of Scope Items

| Component | Out of Scope |
|---|---|
| Customers | • All residential units that are in scope of the Edmonton Cart Rollout project; and<br>• Non-residential customers, including commercial units in mixed-use properties. |
| Collection | • Changes to waste drop-off programs such as Eco Stations, Recycling Depots, the Reuse Centre, Big Bin Events and the Residential Transfer Station;<br>• Method of separating organics and recyclables (i.e. collection and processing of three streams of source-separated waste was determined to be preferable to single-stream collection in the 2021 business case); |

| Component | Out of Scope |
|---|---|
| | • Analysis of the cost of collection performed by City crews and contractors; and<br>• Analysis of the percentage of collection performed by City crews and contractors. |
| Implementation | • A detailed implementation plan for the recommended option. |
| Processing | • Changes to existing processing infrastructure including contracts, equipment and resources. |
| Utility Model | • Analysis for the deregulation of communal collection. |
| Rate | • Changes to the rate charged to communal collection customers. |
| Environmental | • Evaluation of diversion rate impacts of various contract structures;<br>• GHG emissions associated with collections and processing; and<br>• Other engine exhaust pollutant emissions related to transportation. |
| Strategic | • Solutions for on-site management of organic waste for properties that receive communal collection;<br>• Solutions for waste reduction for properties that receive communal collection;<br>• Updates to the Waste Management Policy C527[2];<br>• Diversion rate calculation methodology for communal collection and proposed methods for measuring the diversion (presented separately at the same time of this business case); and<br>• Solutions for cost recovery of stranded capital assets and workforce consolidation as a result of service privatization. |
| Regulatory | • Updates to Waste Services Bylaw 18590 (to follow at a later date based on the alternative approved by City Council).<br>• Strategy and drafting of a new bylaw to regulate private waste haulers through permitting and conditions intended to achieve a comparable outcome with respect to robust data sharing and a regulatory framework. |

### 3.4.1. Cost of Service Study

The motion mentions a Cost of Service Study (COSS) that was to be referred back to Administration as part of developing a new business case. Waste Services has not completed a COSS at this time because it relies on operational data to allocate indirect costs of the utility to different customer classes. With the recent implementation of the Edmonton Cart Rollout project for curbside customers, it is anticipated that the quantity of waste collected and

[2] Waste Management Policy C527

processed from the curbside and communal customers may change and materially impact the allocation of costs between the different customer classes. At least one year of operational and financial data following the implementation of the Edmonton Cart Rollout project is needed to meaningfully inform the COSS and resulting cost allocations.

Instead, a projection of costs for both capital and operating, including stranded costs was completed by Financial and Corporate Services to provide the necessary information about the alternatives presented in this business case.

### 3.5. Critical Success Factors

The following factors have been identified as being critical to the success of a fully privately operated service for communal waste collection customers:

- Application of findings and recommendations from the *Business Case for Residential Communal Collection* associated with CO00581;
- Council, Administration and stakeholders understand the impact privatization might have on residents, including curbside customers;
- Council, Administration and stakeholders understand the difference between privatization and franchising;
- Council, Administration and stakeholders understand the challenges and requirements with remaining a regulated utility for curbside waste collection, processing and disposal, while enabling a franchise or private model for the communal customers;
- Strong and collaborative relationships between the City and haulers and processors to ensure the objectives of the program are met;
- The development and enforcement of a strong data sharing and accountability framework. The framework would have to determine if registration or permitting processes for haulers and processors to service communal collection customers is feasible and how it could be implemented;
- Capacity of the private sector to provide containers and collection, processing and education services to all communal collection customers; and
- Risk identification and management during program planning and implementation.

## 4. Strategic Alignment

Mandatory source separation of waste is aligned with, and critical to support, the City of Edmonton's strategic goals as outlined in the original business case presented in City Operations report CO00581. This section addresses the extent to which privatizing communal collection services aligns with the City's strategic goals.

Strategic alignment of privatized communal collection services was reviewed in the context of the following documents: ConnectEdmonton (Edmonton's strategic plan for 2019-2028)[3], the Corporate Business Plan, the City Plan, the Energy Transition Strategy[4], and the 25-year Waste Strategy[5]. These documents share four foundational goals for Edmonton's future: healthy city, urban places, regional prosperity and climate resilience.

[3] Connect(ed) Edmonton - Edmonton's Strategic Plan 2019- 2028
[4] Edmonton Community Energy Transition Strategy 2021
[5] CR_5829 Waste Strategy - Comprehensive Waste Management Strategy 2019

Implementing mandatory source separation of waste for properties receiving communal collection through private services is less aligned with the goal of Climate Resilience than the same services offered through the Waste Utility, based on the compromised environmental outcomes privatization is expected to achieve, given the lack of processing facilities and regulatory framework.

Proponents have indicated that the privatization of services would better support goals related to Urban Places and Regional Prosperity. They claim that privatizing services offers more flexibility, ensuring that Edmonton's Urban Places are not encumbered by design standards related to waste collection. In fact, both the City and the private sector will require adaptation to serve new styles of development as Edmonton's built form transforms in the manner outlined by City Plan[6]. Waste Services is prepared to adapt collection services while maintaining a commitment to achieving environmental outcomes.

The impact to City Council's goal of Regional Prosperity is also tempered by the already high level of private sector participation in Edmonton's waste system, which includes competitively awarded contracts for waste collections and the operations and maintenance of various facilities at the Edmonton Waste Management Centre.

# 5. Context Analysis

## 5.1. Constraints

The most significant constraint is associated with the lack of any established legal mechanism to have a fully privately operated service within the regulated utility model. The interplay between privatization and the utility structure is described in the following paragraphs.

To achieve private service delivery the clearly available options are limited to either (i) a franchise agreement (resulting in the establishment of a parallel utility) or (ii) permitting private haulers to directly contract with customers (which would mean that communal services would no longer be part of the existing Waste Utility). The motion indicates that the desired goal of regulating the private sector is to facilitate "robust data sharing and accountability" to ensure that diversion targets contained within the 25-year Waste Strategy are met. The motion further requires that management of the communal sector would be the responsibility of "the regulated utility" which we understand to mean the existing Waste Utility. There is an inherent constraint in the motion's desire to facilitate privatization while retaining significant control over private actors through the Waste Utility. It does not seem practical and may not be feasible to establish a system of direct oversight and robust accountability, managed directly by the existing Waste Utility. There are no comparable models to evaluate and adopt that Administration is aware of.

Operating privatized services "within" a public utility is not contemplated by the MGA

[6] Charter Bylaw 20000 - Edmonton City Plan 2020

provisions authorizing public utilities. The current regulatory structure governing the City's Waste Utility (City Council and Utility Committee) is not able to accommodate an accountability framework as described in the motion, as the private entity's contractual relationship would be with property owners, not with the Waste Utility or with the City of Edmonton. Creating a business licensing and permit process for private waste haulers might be able to provide some elements of accountability to the City but not to the same extent that the Waste Utility is currently responsible to Utility Committee and City Council. A business licensing and permitting bylaw would not give Utility Committee or City Council powers to oversee and regulate contracts between private companies and owners of properties that receive communal collection. Accountability would instead be achieved through enforcement against property owners based on the Waste Services Bylaw and against private companies by enforcement of permit conditions that would need to be established in a bylaw. The City would be unable to modify the obligations imposed on private companies, or seek additional data to measure diversion goals without going through the process of updating a bylaw. Such a licensing or permitting process would not be able to regulate the service rates and service standards required to achieve the outcomes of the Waste Strategy and the principles of the Waste Management Policy. Fully privatizing services, however, would allow all service providers to compete in the market and properties would be free to choose a service provider of their choice.

In contrast, franchising allows City Council to regulate services and set requirements for the service providers that are part of the franchising agreement. The City would enter into franchising agreements with one or more service providers and grant them the exclusive right to operate the services as specified. Rates and service level standards would be regulated by the franchising agreements and an accountability framework can be developed to hold the franchisees accountable. Service providers who do not succeed in receiving the award of a franchise agreement would not be able to compete in the market.

As per the motion passed by Utility Committee, and although seemingly not permitted under the MGA, this business case assumes that it would be possible to regulate fully private services at a level equivalent to that of the current Waste Utility. It also assumes that although services are fully privatized, the Waste Utility would be able to direct aspects such as:

- The number of waste streams collected;
- Service levels (e.g. collection frequency, volume limits and collection of items dumped illegally beside bins);
- Program requirements such as co-location of collection containers; and
- Service rates charged to customers.

The following additional constraints flow directly from the motion:

- Waste from the ICI sector and from communal collection customers cannot be co-collected. There are several reasons for this, stemming from existing Waste Services regulations and policies as well as operational effectiveness considerations:
    - As per Waste Services Utility Fiscal Policy, non-ratepayers' use of assets that are funded by waste ratepayers is only permitted if the cost of the non-regulated use is funded by user fees. This means that processing capacity at the EWMC, which is funded by the residential sector, can only be used to process waste from the ICI sector if the ICI sector pays for the use. Therefore, any loads containing

waste from both communal collection customers and the ICI sector could not be processed at the EWMC unless the City was compensated for processing the ICI portion of the waste.
    - It is not possible to accurately monitor contamination by sector if ICI and residential waste streams are mixed during collection. Without contamination data, it becomes impossible to effectively target education and enforcement to help residents improve their sorting behaviour. Sorting behaviour is critical to the achievement of the goals of the 25-year Waste Strategy.
    - The facilities at the EWMC are designed to accommodate projected quantities of residential waste. Allowing residential and ICI waste to be mixed would change the quantity of incoming waste in a manner that may compromise the ability of the facilities to achieve optimal performance.
    - Co-collecting communal customer waste and ICI waste would mean the diversion rate could not be directly calculated separately for each sector, meaning the City would not be able to accurately track progress towards the objectives of the Council-approved 25-year Waste Strategy.
- Reporting must be at a frequency and level of detail that allows the City to track metrics such as the diversion rate and adjust service levels as necessary to achieve the goals; and
- Since the utility rate paid by communal customers covers more than just collection and processing, the costs for the program elements that are not privatized will continue to be recovered through a utility rate. Furthermore, if existing assets related to either collection or processing are stranded due to privatization of services, their value will need to be recovered.

## 5.2. Challenges

External to the City's authority, the lack of landfill bans in Alberta means that there is no mechanism to ensure that source-separated organics and recycling are kept separate from garbage. Without provincial regulations to prevent this, source-separated organics and recyclables could be landfilled due to the appeal of low landfill tipping fees (compared to processing costs). Research has shown that bans prohibiting organics and recyclable material from entering landfills have been a successful tool in ensuring the success of source separation programs. These regulations are often introduced at the provincial or regional level to ensure that all disposal facilities within a region have the same rules. The City continues to engage with its neighbours to explore regional alignment, as defined by the Edmonton Metropolitan Regional Board's 2019 Metropolitan Region Servicing Plan. This work includes a review of landfill bans on successful waste diversion, establishing common reporting protocols and regional advocacy to the Provincial government for Extended Producer Responsibility legislation. Without adequate control over the destination of waste from communal collection customers, the City cannot ensure that the waste is appropriately processed and diversion goals are achieved.

A Provincial regulation mandating Extended Producer Responsibility (EPR) for PPP and SUP is expected to be published in 2022. This regulation would require importers and producers of PPP and SUP to manage those items at the end of their life and achieve specific outcomes related to recycling. Implementation of the regulation is expected to take approximately two years, with a significant transition period. While EPR regulation will provide some assurance about the management of residential PPP, it is not yet clear how services will be delivered or how

communal collection will be provided. Timelines are also uncertain. Therefore, this challenge currently applies to both organics and recyclables, but may apply only to organics in the future.

Another challenge associated with privatization is that those properties most at risk of losing access to an affordable, equitable service include properties with containers in harder to service areas (e.g. tight areas, low clearance or indoors), properties with high turnover of residents (resulting in more waste and higher rates of contamination) and properties with inconvenient service locations. Some of these properties are the least able to afford to pay more. Furthermore, residents are accustomed to thinking of waste as a City issue and will likely expect the City to resolve problems associated with servicing. However, if collection is privatized, the City would no longer have the ability to address such issues.

As the private sector increases its processing capacity, the diversion rate may not simultaneously increase. Any new facilities will likely be outside the City, due to the size of the site required. As a result, they would not be subject to regulation by City bylaws intended to achieve a higher diversion rate, such as by requiring beneficial end use (e.g. no landfilling of finished product), regulating the quality of the end product, or requiring the facilities to be capable of processing highly contaminated streams.

The *Business Case for Residential Communal Collection* identified that container co-location, volume limits and consistent separation requirements across sectors are critical factors to maximizing diversion. These program elements cannot be guaranteed if the service is privatized. The lack of ability to ensure core components of the previous recommendation means that the alternatives with privatized services will not achieve the same outcomes.

Furthermore, the City has identified the need for dedicated outreach to communal collection customers to maximize participation and improve sorting habits. The City has a Waste Education and Outreach team that is prepared to deliver specialized programs of consistent quality to all customers. The delivery of outreach programs by the City would provide consistency across the sector. Privatizing outreach could lead to fragmented or inconsistent programming, leading to lower participation and increased contamination.

The decision to privatize collection or processing may also delay the implementation schedule. The Waste Strategy and the City Corporate Business Plan commit to commencing the implementation of mandatory source separation for communal customers by 2023. This timing is aligned with recent changes for curbside collection customers (the Edmonton Cart Rollout) and changes planned for the ICI sector. Implementation across sectors on similar timelines allows for consistent educational programs, provides equitable service, closes gaps and ensures resident habits are supported across sectors. If changes to the communal collection program are delayed, the ongoing disparity of services between residential programs may have a negative impact on residents' willingness to participate in the source-separated curbside collection program, and there will also be less rationale for mandatory source separation for the ICI sector.

A delay in implementation may also have a direct impact on current contracts Waste Services has with private operators who collect garbage and recycling from properties receiving communal collection. Contracts for Areas 11 and 13 expire in 2023. While the contracts can be

extended, the uncertainty of the timeline presents operational challenges.

## 5.3. Opportunities

The privatization of services could provide some opportunities and benefits to Edmontonians. These include:

- Potential for the provision of more flexible services, which could benefit residents and property managers. For example:
    - A more variable collection fleet with vehicles in a range of sizes (smaller sizes may be desirable for compact properties);
    - The ability to offer a wider variety of collection container types, such as underground containers, which may require specialized collection vehicles; and
    - Flexible pricing reflecting service level and cost of service, based on property size, location or quantity of waste generated.
- Increased competition between haulers could increase their efficiency;
- The establishment of relationships between properties and haulers and between haulers and processors could provide haulers with the ability to work with different processors in the region, which could result in reduced travel time and fuel consumption and enable private alternatives to expand the regional capacity for waste processing where investments at the EWMC may otherwise have been required in the future; and
- As a result of increased funding options, the private sector may be able to develop processing capacity more quickly and deploy technologies that have the ability to manage streams with high contamination.

In addition, the privatization of communal waste services could benefit the City by freeing up facility space and other resources to accommodate growth in other operational areas as a result of no longer being required to maintain a fleet or container inventory for communal collection.

## 5.4. Information from Haulers and Processors

Although it was not feasible to conduct broad public engagement during the development of the business case, Waste Services reached out to various waste collection and processing companies in the region with questionnaires to provide information that would help Waste Services complete its analysis for this business case.

The questionnaire sent to processors asked questions related to current and projected processing capacity for recycling, organics and garbage, the level of contamination accepted, how residuals are managed, how diversion rates are calculated and how diversion could be reported specifically for the communal sector if the service was privatized. Information about the cost for processing contaminated and non-contaminated loads was also requested.

The questionnaire sent to waste haulers gauged their interest in privatizing the waste collection service for communal waste customers in Edmonton and asked questions about their capacity and ability to expand, preferred waste processors (i.e. City of Edmonton or private), how program requirements set by the Utility would be monitored and enforced, how contaminated loads would be noted and managed and how data would be reported to the City. Information about cost structure and how costs might vary for different communal waste customers in Edmonton was also requested.

Very few haulers and processors responded to the voluntary questionnaire. Of the responses received, many were incomplete and some lacked objective details. Therefore, the information could not be used to to complete the analysis in this business case to the extent planned.

Processors mainly noted that, assuming that the City would set strict rules for contamination levels and source separation standards and would have enforcement mechanisms to ensure properties, haulers and processors all adhere to the rules, a privatized collection service would not greatly impact their operations. These rules could be put in place via enforceable bylaws, so that all haulers are competing on a level playing field. Some processors mentioned that having a contract with the City for the provision of organic waste feedstock provides predictability and stability, which allows them to make long-term investments.

The processors did not submit conclusive information about current and future processing capacity for the different waste streams from communal customers. However, responses indicated that securing additional capacity is possible to meet the general demands of waste management (i.e. processing and landfilling) in the region. While a decision by the City of Edmonton to allow the private sector to process organics would help drive new investments, it cannot be assumed that there is appetite for investment in private facilities specifically to service communal collection customers.

Furthermore, information about how processing facilities would record and report diversion rate data for communal collection customers was not submitted and, therefore, could not be included in the analysis of this business case.

Responses from haulers indicated a very strong preference for privatizing waste collection from communal collection customers, but did not elaborate on other sections of the questionnaire. Information on monitoring, enforcement, data reporting and cost was requested via the questionnaire, but was not submitted.

## 5.5. Private Capacity

A critical part of the contextual analysis for this business case is the capacity of the private sector to deliver all of the services required for communal waste collection. These include collection and hauling, processing, container provision, and education and outreach.

The City has some understanding of the private sector's capacity, based on the existing collection and processing contracts, and the limited information that was provided in response to the questionnaire. All information regarding private capacity that was used in the development of the business case is subject to change, because the private sector could be expected to increase its capacity in response to the result of this business case or other opportunities.

Factors that could impact the development of private capacity, if they occur, include:

- City requirements for the ICI sector to source-separate organics and recycling;
- Potential provincial landfill bans on organics or specific types of recyclables; and
- Provincial Extended Producer Responsibility (EPR) regulation requiring increased recycling of packaging, paper products and single-use plastics.

Factors that could limit the development of private capacity include:

- In its capacity as a utility regulator, the City will set high standards for the contamination rate of finished products; and
- The current policy requiring ICI and residential waste from communal collection customers to be kept separate.

# 6. Options

Options were developed for each category of service that is provided to communal collection customers:

- Collection;
- Container Provision;
- Processing; and
- Education and Outreach.

The options for each service category are described in Table 6. As shown in the table, the detailed options describe a wide variety of ways the Waste Utility could manage rates, material flow and container provision, in combination with how contracts could be structured between service providers, customers and the City. Condensed options focus strictly on the contractual relationships and were developed when the first round of analysis revealed that many of the details had little impact on the evaluation. The condensed options are presented to make it easier for readers to understand the material differences between options and do not preclude consideration of any of the detailed options. Definitions of the detailed options are provided in Appendix A.

Table 6: Options for Service Categories

| Service | Detailed Options | Condensed Options | Condensed Option Code |
|---|---|---|---|
| Collections | Properties contract hauler(s) with regulated rates | Collection contract between property and hauler(s) | C1 |
| | Properties contract hauler(s) with fixed rates | | |
| | Properties contract hauler(s) with submitted rates | | |
| | Properties contract own hauler(s), City or private | | |
| | City contracts hauler(s) for collection | Collection contract between City and hauler(s) | C2 |
| | Status Quo: current contractor/City split for communal waste collection | | |

| Service | Detailed Options | Condensed Options | Condensed Option Code |
|---|---|---|---|
| Processing | Processing at EWMC is not mandatory | Hauler(s) are free to choose their own facilities | P1 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Hauler(s) are required to use the EWMC | P2 |
| | Status Quo: all garbage brought to IPTF at EWMC | | |
| Container Provision | City provides no containers | City provides no containers | CP1 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | City provides containers | CP2 |
| | City provides containers only to properties it collects from | | |
| | Status Quo: City provides waste containers (carts and bins) to all communal collection properties | | |
| Education and Outreach | City provides no education or outreach programs, left to multiple entities | City provides no education or outreach | EO1 |
| | City provides no education or outreach programs, left to single entity | | |
| | City provides education and outreach only to properties it collects from | City provides education and outreach | EO2 |
| | City provides education and outreach only for particular streams (one or two of recycle, organics, garbage) | | |
| | City provides education material, distribution is left to anyone | | |
| | Status Quo: City provides all education and outreach programs | | |

# 7. Options Analysis Methodology

The options analysis used a two-stage approach. In the first stage, the detailed options were evaluated against a wide range of criteria. In the second stage, the condensed options were evaluated in terms of their risk and cost.

As described in Section 5.4, and in support of the options analysis, Waste Services requested information from private haulers and waste processors about their current capacity and future plans through a questionnaire. The information collected through these conversations and the questionnaire was used to inform the options analysis as much as possible. However, Administration's ability to quantitatively evaluate options involving privatization was limited due to the lack of information about private sector operators.

## 7.1. Stage 1 Process and Results

The detailed options presented in Section 6 were evaluated against the criteria in Table 7.

Table 7: Criteria for Stage 1 Analysis

| Criteria | Definition |
|---|---|
| Satisfies Utility Committee Motion | An evaluation of whether or not the proposed option satisfies the Utility Committee motion, with a focus on a fully privately operated service and regulated utility model. The remainder of the motion was considered administrative responsibilities. |
| Revenue Requirement Impact | A high-level evaluation on the option's impact on the Waste Utility's revenue requirement. These impacts could be caused by stranded costs, reduced ratepayers, etc. |
| Protection of Communal Waste Customer Interests | A high-level evaluation of the option's impact, specifically to communal collection waste customer interests, in regards to matters such as rate consistency, missed collection, property damage and enforcement of the preservation of these interests. |
| Diversion Rate Impact | A high-level evaluation of the option's impact on the communal collection diversion rate, specifically for reaching the 90% diversion rate goal. |
| Enforceability of Program Requirements | A determination of how difficult an option makes enforceability (by the City) of requirements to meet the objectives of the 25-year Waste Strategy and adherence to bylaws, i.e. the ability to hold service providers accountable. |
| Logistical Complexity | A determination of how much the option increases the logistical and administrative complexity for the City, e.g. routing, reporting program success metrics, tracking GHG emissions, etc. |

Each detailed option was evaluated against each criterion on a scale of one to five by a group of subject matter experts within Waste Services in a series of structured workshops. Information received from private haulers and waste processors was also taken into account. Notes and results were recorded transparently and in detail to allow the project team to provide critical feedback and make adjustments as necessary.

Of the 19 detailed options presented in Table 6, 13 needed to be considered independently for each of the three waste streams. This resulted in 45 options across all four service categories and three waste streams. During Stage 1 scoring it became apparent that Processing and Container Provision options would score differently based on which Collections options they were paired with. For this reason, the Processing and Container Provision options for each waste stream were evaluated in the context of each of the six Collections options, resulting in a total of 150 options. For example, the Container Provision option "City provides containers only to properties it collects from" scores differently depending on whether or not the City is involved in providing collection services. Table B1 in Appendix B presents all 150 options and the results of Stage 1 analysis. The scoring of the 150 options revealed that similar options across different streams scored the same; based on those similar scores, options were then combined into groups.

At this stage of the analysis, the status quo groups for each service category scored higher than any of the privatization groups. Within the privatization groups, there was little difference between the options. Nonetheless, the decision was made to conduct a more quantitative analysis of all of the options in Stage 2 which would allow a final recommendation to be made with more confidence.

To proceed to Stage 2, the grouped options were combined into condensed options, which combine options with similar contractual arrangements and intent. Table 6 displays how groups were combined into condensed options.

## 7.2. Stage 2 Process and Results

The Stage 2 analysis focused on cost, as defined by the Net Present Value (including the cost of stranded assets), and risk. These criteria are defined in Table 8.

Table 8: Criteria for Stage 2 Analysis

| Criteria | Definition |
|---|---|
| Net Present Value (including cost to strand assets) | A detailed evaluation of the expenses and savings that an option incurs over a period of time to present a value based on today's dollar value. The NPVs for this analysis run a duration of 24 years; stranded costs are included in the values where applicable. The NPV analysis only includes costs to the City as the cost of private services to customers could not be estimated. |
| Risk Register | A detailed evaluation of the risks that implementing an option creates. |

The analysis for Stage 2 evaluated the condensed options. If City Council wishes to proceed with an alternative that includes privatization, further analysis of the privatization options is required in order to develop a recommendation. The analysis for Stage 2 was conducted by subject matter experts within Waste Services.

Note that diversion rate projections are not included as a criterion in the evaluation due to a lack of reliable information about the future capacity of private facilities. The lack of reliable information means that Administration was not able to make reasonable predictions regarding future private facility processing capabilities. For example, no private facilities have been established in the Edmonton region to date that use preprocessing equipment for the organics stream; this technology is only in place at the EWMC. Similarly, there are no private facilities capable of producing refuse derived fuel from residual waste.

As there is currently no private processing equipment in the region that is equivalent in terms of capacity or diversion, many assumptions would be required regarding the type and size of future private processing facilities. These assumptions would greatly impact estimates of the diversion rates for alternatives, including private processing. With the current lack of provincial landfill bans, it is more likely that privatizing processing would lead to a lower diversion rate than keeping processing within the City's control. However, if provincial landfill bans were enacted (which would require significant advocacy by City Council) the private sector would be more likely to develop facility capabilities similar to (or better than) the EWMC. Since private facilities could be better, worse, or equivalent to the facilities at the EWMC in terms of diversion performance, the decision was made to eliminate the estimated diversion rate from the evaluation criteria.

Once the evaluation of the condensed options was conducted, complete "packages" were built, covering the full suite of services. Every possible combination of options was generated, resulting in 16 packages. The packages were examined for logical consistency and packages with options which would not be suitable together were eliminated (e.g. private collection with city container provision). This resulted in 11 packages being eliminated. The five remaining packages are the viable alternatives for the purposes of this business case. Table 9 shows the five viable alternatives. All 16 packages are presented in Appendix C and a detailed list of assumptions for the analysis of this business case can be found in Appendix D.

Table 9: Viable Alternatives

| Viable Alternative Number | Viable Alternative Name | Viable Alternative Description | Condensed Options | | | |
|---|---|---|---|---|---|---|
| 1 | Full Privatization | All services privatized. | C1 | P1 | CP1 | EO1 |
| 2 | Privatization with City Processing | Processing and disposal managed by the City, all other services privatized. | C1 | P2 | CP1 | EO1 |
| 3 | Privatization with City Education | Education and Outreach is managed by the City, all other services privatized. | C1 | P1 | CP1 | EO2 |
| 4 | Private Collection and Containers | Processing, disposal and Education and Outreach are managed by the City. Collections and Container Provision privatized. | C1 | P2 | CP1 | EO2 |
| 5 | City Managed Services | All services managed by the City (equivalent to the recommendation in the *Business Case for Residential Communal Collection* attached to CO00581). | C2 | P2 | CP2 | EO2 |

| City Provided |
|---|
| Privately Provided |

## 8. Stakeholder Business and Operational Impacts

The impacts to internal and external stakeholders were evaluated for the initiative. Table 10 identifies the stakeholders and the business and operational impacts associated with them.

Table 10: Stakeholder Impacts

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Waste Services (internal) | • Prepare business case for City Council based on approved alternative, including program details | • Fulfillment of key strategic goals such as diversion from landfill through successful implementation |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| | and public engagement results.<br>• Update Waste Services Bylaw to ensure program expectations are clear.<br>• Modify the Waste Utility as required to privatize services.<br>• Fulfillment of key strategic goals such as diversion from landfill through successful implementation of the new program.<br>• Adjust resource demands to meet the service level and program requirements.<br>• Development of new enforcement strategies for the implementation of program changes.<br>• Reductions in staffing and equipment if privatized. | of the new program.<br>• Adjust resource demands to meet the service level and program requirements.<br>• Development of new enforcement strategies for the implementation of program changes. |
| Fleet and Facility Services (internal) | • Support for surplus and asset disposal of equipment if services are privatized.<br>• Potential decrease of resources if services are privatized. | • Potential increase in resource demand to support fluctuation in vehicles and equipment needs. |
| Communications and Engagement Department (internal) | • Change in resource and schedule demands to accommodate program needs.<br>• Depending on the selected alternative, a decrease in resources needed to support Education and Outreach. | • Change in resource and schedule demands to accommodate program needs. |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Executive Leadership Team (internal) | • Support the implementation of the recommendation.<br>• Review progress and provide direction. | • Support the implementation of the recommendation.<br>• Review progress and provide direction. |
| City Council (internal) | • Review and approve business case including supporting documentation and attachments.<br>• Provide any additional direction to Administration.<br>• Receive and discuss any public feedback directly.<br>• Make recommendations as required including parameters for privatization options, if applicable. | • Review and approve business case including supporting documentation and attachments.<br>• Provide any additional direction to Administration.<br>• Receive and discuss any public feedback directly. |
| EWMC (internal) | • Adjust operational procedures to match changes in incoming waste from communal customers. | • Adjust operational procedures to match changes in incoming communal sector waste. |
| Financial Services (internal) | • Review and consult on financial impact of program changes.<br>• Make recommendations as required. | • Review and consult on financial impact of program changes.<br>• Make recommendations as required. |
| Corporate Procurement and Supply Services (internal) | • Provide resources to meet the project procurement, surplus and asset disposal needs depending on the preferred alternative. | • Provide resources to meet the project procurement needs. |
| Legal Services (internal) | • Provision of expert legal review of privatizing approved options. | • Provision of expert legal review of program, tender and contract aspects. |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Community Standards and Neighbourhood (internal) | • Work collaboratively with Waste Services to recommend bylaw changes. | • Work collaboratively with Waste Services to recommend bylaw changes. |
| Urban Planning and Economy (internal) | • Increased involvement in reviewing and approving waste infrastructure in proposed developments if collection and/or container provision services are privatized. | • Potential impact to the Zoning Bylaw to ensure compliance with waste developer standards including enforcement staff capacity and resourcing.<br>• Representation needed for discussion on container aesthetics and screening requirements. |
| Employee Services (internal) | • Provide support on human resource management needs and layoffs depending on preferred alternative. | • Provide support on human resource management needs. |
| Open City and Technologies (internal) | • Provide information technology resources as required. | • Provide information technology resources as required. |
| Waste Services OHS (internal) | • Reduced level of involvement in communal collection. | • Provide resources to review and finalize the project OHS program. |
| Corporate Enviso (internal) | • Reduced level of involvement in communal collection. | • Provide resources to review and finalize the project Enviso documents. |
| City of Edmonton Unions (external) | • Work with the City to privatize services that are approved for privatization by City Council.<br>• Work with the City to process staff layoffs as within the rules of the Collective Agreements. | • Ongoing fulfillment and support of working relationships and principles. |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Communal Collection Customers (external) | • Participate in public engagement to provide feedback to City Council before a final decision is made.<br>• Change behaviour and routines to transition to a new program.<br>• Be aware of how the program implementation affects their approach to waste generation and management.<br>• Become involved in finding contracts for privatized services. | • Changes to behaviour and routine required to transition to a new program.<br>• Be aware of how the program implementation affects their approach to waste generation and management. |
| Property managers of properties receiving Communal Collection: management companies, property owners, property management, and condo boards (external) | • Participate in public engagement to provide feedback to City Council before a final decision is made.<br>• Potential impact to resourcing and time to communicate with City staff regarding program changes.<br>• Potential increase to resourcing and time to communicate with residents regarding program changes.<br>• Potential additional costs should infrastructure changes be required.<br>• Secure contracted services and negotiate contracts if the program is privatized.<br>• Provide data or reports to the City as requested or planned in the future. | • Potential increase to resourcing and time to communicate with City staff regarding program changes.<br>• Potential increase to resourcing and time to communicate with residents regarding program changes.<br>• Potential additional costs should infrastructure changes be required. |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Developers (external) | • Work with private haulers and the City to ensure new developments meet program requirements.<br>• Participate in additional consultation regarding new standards. | • Potential new costs, resources or time needed to adapt new building designs to meet new expectations.<br>• Participate in additional consultation regarding new standards. |
| Collection Services Contractors (external) | • Impact to fleet and resources depending on the preferred alternative.<br>• Enter into negotiations and sales with properties individually instead of with the City. | • Opportunity to procure contracts and service communal collection customers.<br>• Resource and equipment needs for providing the service to communal collection customers. |
| Waste Container Manufacturers (external) | • Opportunity to supply and distribute containers to properties and haulers depending on the alternative approved. | • Opportunity to supply and distribute containers to the City. |
| EPCOR (external) | • Changes required to the billing system used by Waste Services. | • Update the billing system and waste account setup system as required.<br>• Ensure all relevant staff are trained. |
| Regional Processing Entities (external) | • Compete in the market and enter into contracts with haulers instead of the City depending on the alternative approved.<br>• Ensure the processing requirements meet the objectives of the City.<br>• Invest in capacity based on independent market assessment. | • Adjust capacity needs as required by the municipality.<br>• Adjust technologies and processes as necessary for incoming feedstock. |
| Alberta | • Review and approve any | • Review and approve any |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| Environment and Parks (external) | approval or amendment to existing approvals for waste processing. | approval or amendment to existing approvals for waste processing. |
| Current Waste Services Collection Contractors (external) | • Potentially adjust contracts with the City depending on the approved alternative and implementation plan. | • Provide resources to ensure all waste vehicle modifications/purchasing meets the City timeline and requirements. |
| Local Waste Management Organizations (external) | • Provide input and help the City deliver a successful program.<br>• Work collaboratively with the City in implementing the approved alternative. | • Provide input and help the City deliver a successful program. |
| Greater Edmonton Region Municipalities (external) | • The approved alternative may impact sector expectations and market conditions for surrounding municipalities and potentially affect program changes proposed by municipalities in the future. | • The proposed program changes will create precedence that may impact sector expectations and market conditions for surrounding municipalities and potentially affect program changes proposed by municipalities in the future. |
| Groups covered under GBA+ Review (external) | • Added flexibility for container types and vehicles.<br>• Potential difficulty securing access to an affordable, equitable service for harder-to-service properties (e.g. tight areas, low clearance or indoor garbage rooms), properties with high resident turnover (resulting in more waste and higher rates of contamination) and | • All properties have equal access to service at the same cost.<br>• Flexibility unchanged. |

| Stakeholder Name | Business and Operational Impact associated with Viable Alternatives 1, 2, 3 and 4 | Business and Operational Impacts associated with Viable Alternative 5 |
|---|---|---|
| | properties with inconvenient service locations. Some of these properties are the least able to afford to pay more. | |

# 9. Costs

This section highlights the Capital and Operating savings and costs for the alternatives presented in this business case. It is important to note that only the four service categories listed in this business case were considered for privatization and are included in this analysis. Other services such as Eco Stations, Recycling Depots, Big Bin Events, and landfill management, which are also funded by the utility rate paid for by customers, would remain as-is and are not reflected in this analysis.

## 9.1. Capital

Alternatives 1, 2, 3 and 4, each involve privatizing one or more service categories related to communal collection (Collections, Processing, Container Provision, and/or Education and Outreach). Capital costs for the acquisition or development of privately funded Collections, Processing, Container Provision and/or Education and Outreach were not included in the capital cost estimates for Alternatives 1 through 4, because accurate information was not available and such costs would not be incurred by the Waste Utility. The only new acquisitions associated with Alternatives 1 through 4 are for light duty vehicles owned by the City, which are required to support program liaison and regulatory efforts to regulate the privatized elements.

The privatization of communal collection-related services would require that the ownership and utilization of associated City assets be reallocated or disposed of. While the disposition of these assets is outside the scope of this business case, assets with contributions from the communal sector but supporting functions of the Waste Utility as a whole would need to be retained so that the Utility can continue to serve its customers in the curbside collection. Assets that solely support the communal collection properties may not be retained, but as there is no established market identified, these assets are also considered a cost to the rest of the Utility as a result of privatization. Should privatization occur, recuperation of these costs would be a future consideration. The capital cost estimates for stranded assets associated with Alternatives 1 through 4 are based on the value of existing City assets that were acquired and/or are still being amortized, partially or fully, with contributions from the communal collection properties, as determined based on cost allocation methodologies outlined in a 2017 Cost of Service Study.

Net Book Values (NBV) of assets that will be stranded for each service are summarized in Table 11 below. The total value of stranded assets across all services related to communal collection is just over $55 million as of the end of 2021. As assets are continually added to and/or retired

from the Waste Utility, this figure will fluctuate from year to year. A high level list of assets which are considered stranded for these categories and their remaining useful life is provided in Appendix E.

Table 11: Net Book Value of Stranded Assets for Each Communal Collection-Related Service as of Year End 2021

| Communal Collection Related Service | Value | Key Example of Assets |
|---|---|---|
| Collections | $14,256,719 | Fully allocated to communal collection properties: Buildings (administration and garage facilities), collection vehicles, light duty vehicles and auxiliary equipment.<br><br>Partially allocated to communal collection properties: Buildings (general administration, Eco Stations), light duty vehicles and mobile equipment that support community drop-off services. |
| Processing | $32,841,341 | Fully allocated to communal collection properties: None<br><br>Partially allocated to communal collection properties: (Except assets that are fully dedicated to non-regulated services) all buildings at EWMC (administration, processing, treatment), all EWMC site infrastructure (roads, scalehouse, curesite, laydown), all EWMC mobile equipment, all heavy and light duty vehicles, all processing equipment and all auxiliary equipment. |
| Container Provision | $2,884,436 | Fully allocated to communal collection properties: Heavy and light duty vehicles, containers and replacement parts.<br><br>Partially allocated to communal collection properties: None |
| Education and Outreach | $0 | None |
| Loan Repayment | $5,024,467 | Includes 3.05% annual interest accrual on capital asset loans and a repayment penalty for repayment of these loans. |
| **Total** | **$55,006,963** | |

Privatization options that lead to any changes in the Utility's revenue requirement (i.e. additional costs incurred) could result in one or more of the following:

- A rate increase for curbside collection customers (despite there being no change to their service);
- An exit fee charged to properties receiving communal collection;
- Tax subsidy;
- Development of a mechanism to fund shared waste services that are the responsibility of all Edmonton residents; and/or
- Other financial mechanisms to account for additional expenses incurred as a result of privatization.

The scope of this business case does not include making recommendations regarding the best mechanism (or combination of mechanisms) to compensate for additional revenue requirements. Additional analysis and implementation planning will be required should City Council decide that further consideration is warranted for the privatization options.

Alternative 5 requires more new acquisitions, but avoids capital costs associated with stranding existing assets. Capital costs for Alternative 5 include the purchase of collection vehicles, containers (both carts and bins), as well as their corresponding replacement parts, contingency and inflation.

## 9.2. Operating

For the privatization alternatives (Alternatives 1, 2, 3, and 4), the following operating costs and savings were considered:

- Full time equivalent (FTE) positions fully dedicated to communal services would be eliminated if the service in question were privatized. The elimination of these positions will result in costs avoided/savings.
- Personnel in roles that support the overall Waste Utility (i.e. not dedicated to communal services) are considered partially stranded, as the elimination of these positions would negatively impact the services provided to curbside collection customers. Contributions from communal services for these positions, estimated based on cost allocations outlined in a 2017 Cost of Service Study, are therefore included in the analysis as costs to the Waste Utility if privatization were to occur.
- Other avoided costs include the elimination of collection contracts, fuel and maintenance for the collections fleet.
- Other personnel costs include the addition of FTEs associated with:
    - Liaison with and utility rate collection from private service providers;
    - Waste bylaw enforcement with respect to communal collections level of service; and
    - Tracking and enforcing progress towards waste diversion goals.

It should be noted that the savings or avoided costs listed above would be realized by the Waste Utility as a direct result of the removal of the service from the utility rate. In order for communal collection ratepayers to realize a saving in the total cost to maintain the current level of service offered, the removed service would have to be available to these customers at a cost equivalent to or less than the savings from the Waste Utility. A summary of personnel costs

allocated to communal services is provided in Appendix F.

Table 12 shows the annual operating costs and savings for each communal collection-related service, unadjusted for inflation. Positive values indicate savings while negative values indicate costs.

Table 12: Annual Operating Costs and Savings Summary for Privatizing Each Communal Sector-Related Service

| Costs/Savings (Unadjusted for Inflation) | Collections | Processing | Container Provision | Education |
|---|---|---|---|---|
| Personnel Savings[7] | $2,438,502 | $0 | $344,800 | $0 |
| Personnel Costs (Stranded Resources)[8] | ($2,428,462) | ($5,495,005) | $0 | ($525,227) |
| Other Savings[9] (Avoided Costs) | $5,797,229 | $0 | $0 | $0 |
| Additional Personnel Costs (Enforcement Program Support and Liaison) | ($1,450,431) | ($236,072) | $0 | $0 |
| **Total** | **$4,356,838** | **($5,731,077)** | **$344,800** | **($525,227)** |

Operating costs for Alternative 5 have been adapted from the *Business Case for Residential Communal Collection* presented in 2021. This ensures the costs reflect mandatory co-location and voluntary chute closure, as recommended. Adjustments have been made to the inflation and debt to equity ratios rates, as well as fuel costs to reflect the latest forecasting and business planning figures.

## 9.3. Net Present Value (NPV) for Alternatives

The total costs (i.e. revenue requirement to the Waste Utility) in Net Present Value for Alternatives 1 through 5 are summarized in Table 13 and 14 below. These costs are not presented in the same table as they are not like-for-like comparisons in terms of the services included in the cost estimate. The costs associated with privatized services are not included in this analysis, because the responses received from private haulers and processors in the region did not contain sufficient information to enable development of complete cost estimates for privatized services. As a result, the analysis could not evaluate the cost impact to residents (i.e. there is no reasonable way to estimate the additional fees that customers would need to pay private operator(s) in order to maintain all of the services that they currently receive).

[7] Resources that are fully dedicated to communal services.
[8] Resources that are partially dedicated to communal services.
[9] Includes collection contracts, fuel expenses and maintenance

Table 13: NPV Analysis for Costs and Avoided Costs to the Waste Utility for Alternatives 1 Through 4

| Cost Category | Alternative 1 (Full Privatization) | Alternative 2 (Privatization with City Processing) | Alternative 3 (Privatization with City Education) | Alternative 4 (Private Collection and Containers) |
|---|---|---|---|---|
| Capital Cost (Procurement)[10] | ($1,717,276) | ($1,609,946) | ($1,717,276) | ($1,609,946) |
| Avoided Costs[11] | $264,244,689 | $264,244,689 | $264,244,689 | $264,244,689 |
| Operating, Maintenance and Lease Costs[12] | ($62,998,917) | ($54,525,980) | ($100,258,717) | ($91,785,318) |
| Stranded Capital Costs[13] | ($55,006,963) | ($18,563,961) | ($55,006,963) | ($18,563,961) |
| Stranded Operating Costs[14] | ($260,184,614) | ($90,961,332) | ($244,009,796) | ($74,786,515) |
| Net Present Value | ($85,363,470) | $44,547,632 | ($98,565,041) | $31,346,060 |

Table 14: NPV Analysis for Costs and Avoided Costs for Alternative 5

| Cost Category | Alternative 5 (City Managed Services) |
|---|---|
| Capital Cost (Procurement)[15] | ($29,010,706) |
| Avoided Costs | $0 |
| Operating, Maintenance and Lease Costs[16] | ($93,548,052) |
| Stranded Capital Costs | $0 |
| Stranded Operating Costs | $0 |
| Net Present Value | ($71,499,083) |

[10] Includes light duty vehicles.
[11] Includes elimination of fuel and maintenance cost and fully dedicated personnel.
[12] Includes additional staff for enforcement and waste characterization studies.
[13] Includes buildings, vehicles, containers and equipment.
[14] Includes partially dedicated personnel.
[15] Includes vehicles and containers.
[16] Includes new positions, education material, waste characterization studies and collection contracts.

While Alternatives 2 and 4 result in the lowest cost to the Waste Utility and offer savings over a 24-year project life, communal customers will not fully realize these savings, as they will still need to cover the cost of privatized services. For example, the net savings presented in Alternatives 4 equals $31.3 million. These savings will be distributed over approximately 167,000 communal customer accounts (as of 2021) over 24 years. In other words, the privatization of collections and container provisions services alternative will result in a "savings" of $187.70 per account over 24 years, or $0.65 per account per month (based on the current number of customer accounts). When compared to Alternative 5 (-$1.49), the "savings" equals $2.14 per account per month. That means that the average communal collection customer would only benefit from the change in service delivery model if collections and container provisions services can be secured for under $2.14/customer/month, for 24 years. The number of accounts is expected to increase substantially over that period, based on the City's preferred development patterns as described in the City Plan, meaning that savings per unit will decrease.

Figure 1 illustrates the services provided by the City for each alternative and the difference in NPV per unit per month between Alternatives 1 through 4 and Alternative 5. The white segments in the figure are excluded from the cost estimate and represent services residents would need to obtain from the private sector and pay for separately (i.e. not provided by the City). The services that are not provided by the City would need to be obtained from the private sector by communal collection customers and represent an unknown cost. Alternatives 1 and 3 result in increased costs to the Waste Utility (largely based on the shared assets and personnel associated with processing services required to service curbside collection customers), while communal collection customers receive fewer services and will be required to pay directly for private services. Alternatives 2 and 4 result in decreased costs to the Waste Utility, but the decrease is likely to be less than the cost of securing the missing services from the private sector for the average communal service customer.

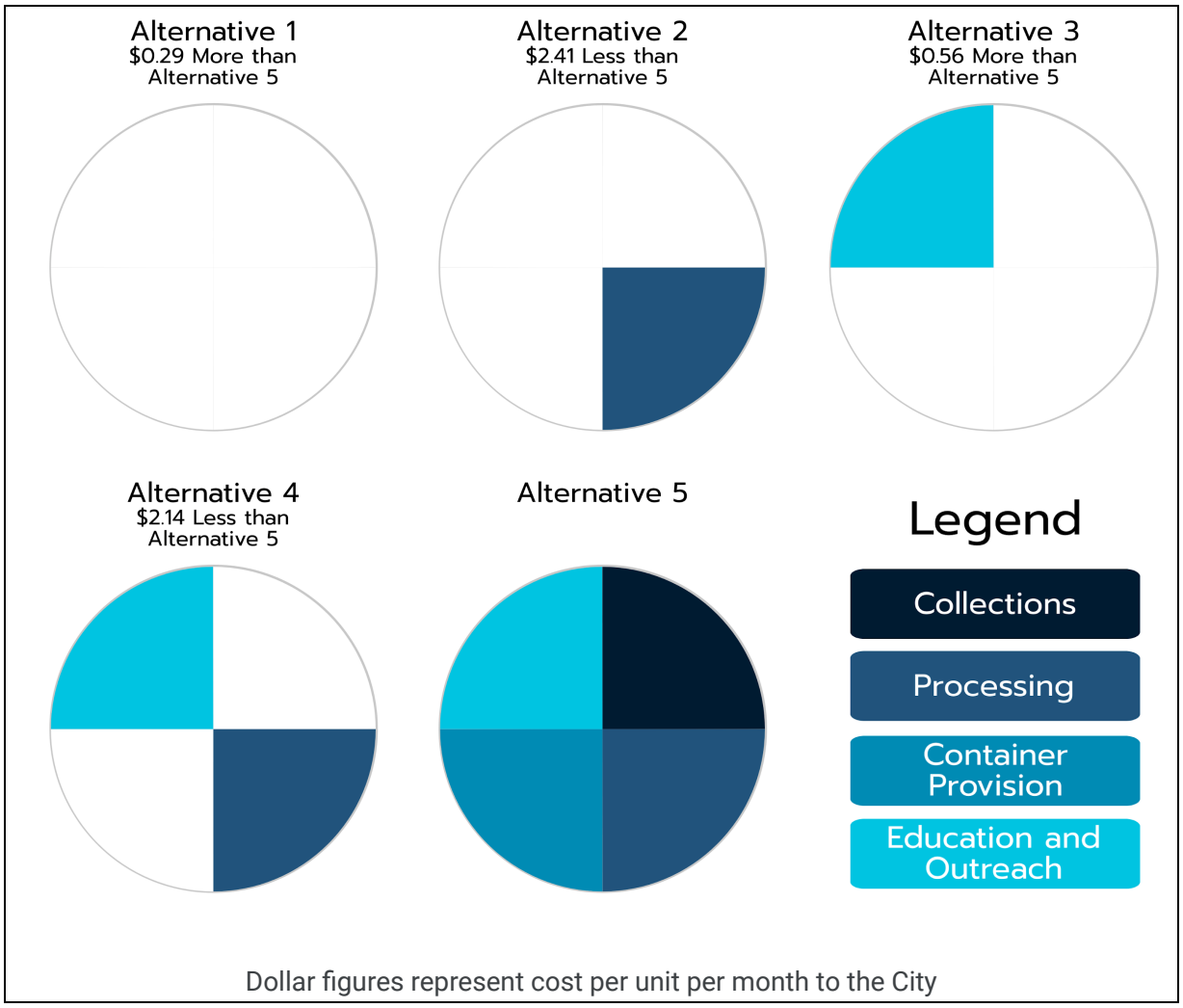



Figure 1: Comparison of Service and Cost per Unit per Month to the City

Appendix G and H provide the detailed alternative cost comparison summary and a comparison of revenue requirements for the alternatives respectively.

## 9.4. Staff and Fleet Impacts

Table 15 below shows the number of new staff and additional fleet requirements for all of the alternatives. The numbers for Alternatives 1 through 4 do not account for positions that could be eliminated due to privatization of a specific service. Rather, it represents the additional FTEs needed to manage and implement the specific alternative. The numbers for Alternative 5 include collection staff and fleet required to support collection of waste from the areas serviced by City crews (but not contractor serviced areas). It also includes education and outreach, GIS mapping and customer support staff required to support all areas of the City (regardless of collection crews). The numbers for Alternative 5 reflect needs that are in addition to what is already included in today's program, but do not reflect how existing resources may be shifted to prioritize the delivery of a new program. If the recommended alternative is approved, the rate

impact of a new program will be presented in the 2023 Waste Services Utility Rate Filing. A summary of the net staffing impact, reflecting an effort to realign existing resources based on an assessment of the systems impact of an approved program change, would be presented at the same time.

Alternatives 1, 2, 3 and 4 would require staff to support the enforcement and management of the program. The numbers below do not reflect how existing resources may be reallocated to support delivery of a new program and are estimated at the level of analysis completed to date. If privatization is preferred by City Council, Administration would provide an updated list of staff and fleet requirements at a later date.

Table 15: New FTE and Additional Fleet Requirements for Viable Alternatives

| Category | Alternative 1 (Full Privatization) | Alternative 2 (Privatization with City Processing) | Alternative 3 (Privatization with City Education) | Alternative 4 (Private Collection and Containers) | Alternative 5 (City Managed Services) |
|---|---|---|---|---|---|
| Permanent and seasonal FTEs | 11 | 9 | 20 | 18 | 30 |
| Temporary FTEs for implementation | 0 | 0 | 13 | 13 | 14 |
| Additional fleet requirements including spare ratio | 9 | 8 | 9 | 8 | 12 |

## 10. Risk Scores

A comprehensive risk register was developed to assess the risks for each option. Each option was assigned a risk score on the basis of the risks identified and that score carried forward into the packaged alternatives.

The total risk scores avoided are presented in Table 16. Risk registers showing a list of high risks, impacted stakeholders and their scores are available in Appendix I. Risk scores are based on risk impacts before mitigation strategies are in place. Upon a decision from City Council regarding the preferred Alternative, mitigation strategies will be developed for the risks associated with the approved alternative.

The Risk Score reflects the risk avoided by an alternative. This approach was used to maintain consistency with the other scores where a higher percentage represents better performance. A

risk analysis was completed to determine each alternative's risk potential and actual risk. The risk score is based on the difference between the risk potential and actual risk. For example, the risks associated with Alternative 1 had a potential score of 1,625 (if all risks had maximum likelihood and impact). The actual risk associated with Alternative 1 had a score of 736 (based on expected likelihood and impact). The avoided risk is therefore 889. The score is the ratio of the avoided risk to potential risk, where more risk being avoided results in a higher score. Table 16 and Figure 2 provide a summary of the Risk Avoided Score.

Table 16: Risk Avoided Score for Viable Alternatives

| Categories of Risk Avoided | Alternative 1 (Full Privatization) | Alternative 2 (Privatization with City Processing) | Alternative 3 (Privatization with City Education) | Alternative 4 (Private Collection and Containers) | Alternative 5 (City Managed Services) |
|---|---|---|---|---|---|
| Collection | 286 | 286 | 286 | 286 | 391 |
| Processing | 303 | 372 | 303 | 372 | 372 |
| Container Provision | 167 | 167 | 167 | 167 | 236 |
| Education and Outreach | 133 | 133 | 249 | 249 | 249 |
| **Total Risk Avoided** | **889** | **958** | **1,005** | **1,074** | **1,248** |
| Total Possible Risk | 1,625 | 1,625 | 1,625 | 1,625 | 1,625 |
| **Risk Score**[17] | **55%** | **59%** | **62%** | **66%** | **77%** |

[17] Higher values indicate the Alternative presents less risk.

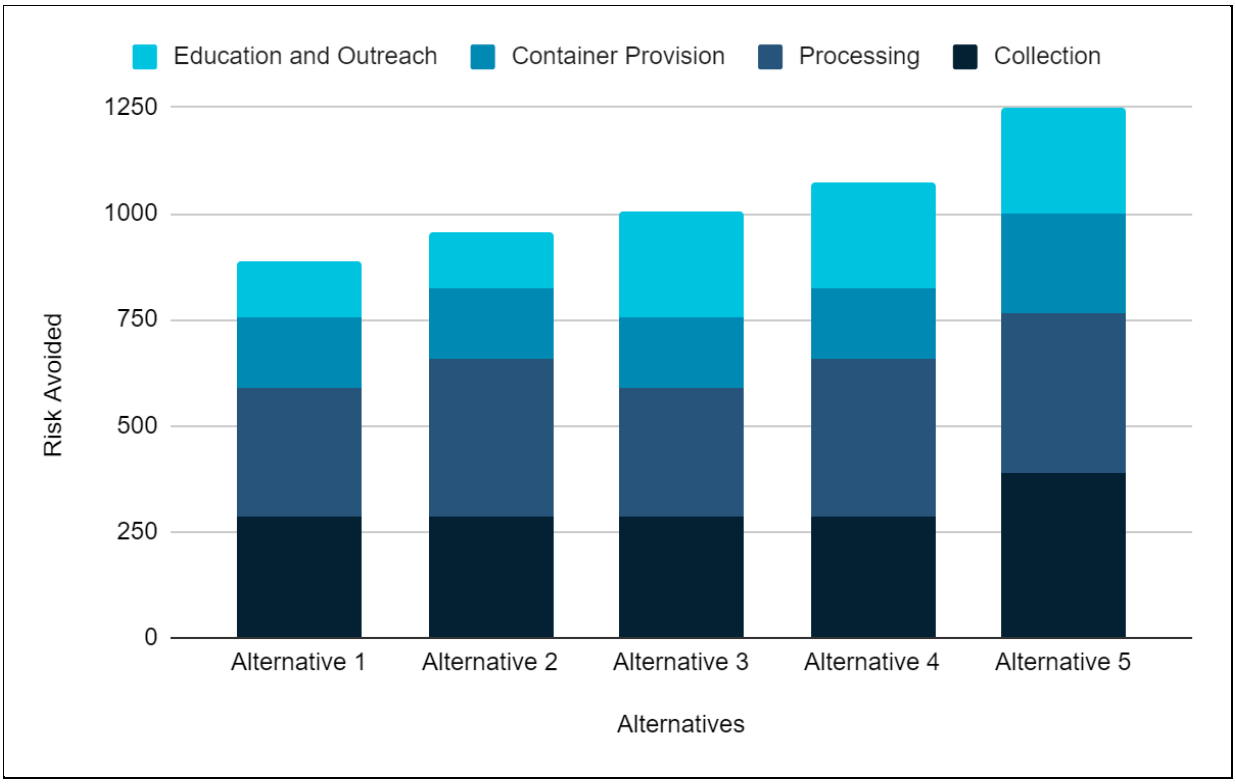



Figure 2: Risk Avoided for Viable Alternatives

# 11. Environmental Impact

## 11.1. Diversion

While diversion rate was not used as a criterion for the formal scoring of the alternatives, it is still useful to consider qualitatively what the diversion rate impacts of each alternative are likely to be and why.

Since three-stream source separation would be mandated in all scenarios, the diversion rate for all alternatives considered is driven primarily by the Processing service, rather than Collection, Container Provision or Education and Outreach. While these other services may impact diversion, the largest differences are expected to be the result of differences in processing.

In the short-term, alternatives in which the City manages processing (Alternatives 2, 4 and 5) are likely to achieve higher diversion rates, because the City has existing facilities and contracts with private processors that can achieve high diversion rates and handle contaminated streams. The City can also increase diversion by producing refuse derived fuel (RDF) from residual waste.

Alternatives in which the City provides Education and Outreach are also likely to achieve higher diversion rates in the short-term, because of the City's existing education and outreach services and experience.

In the long-term, the differences in diversion rates are harder to predict. Administration does not have the information necessary to know what the private sector can achieve. The private sector has a profit motive that is not present in the public sector, and as such, construction and operation of capital-intensive preprocessing and RDF facilities may not be attractive. Administration anticipates that upcoming municipal regulations to require source separation by ICI waste generators, as committed to in the 25-year Waste Strategy, may spur the development of private processing facilities. Assuming those facilities are built and operating at full capacity, their diversion rate can be assessed more accurately. By the time those facilities are constructed, provincial EPR regulations are likely to have transferred responsibility for managing packaging and paper products and single-use plastics to producers, meaning that the private sector will have a regulated duty to achieve specific levels of recycling.

Administration found (through the questionnaire sent to regional processors) that there may be facilities coming online in the future. As there is currently no call for private processing capacity for residential waste, it can be assumed that these facilities are being designed to process waste from the ICI sector. If processing remains under Waste Services, whether through current or planned facilities at the EWMC or through regional partners (similar to arrangements recently established for organics generated by curbside collection customers), the City of Edmonton would be able to continue to invest in, or support the investment by local processors in, facilities that support the City's waste diversion goals. This is more likely to foster innovation that leads to improved diversion rates down the road as the performance of these facilities matures.

Unless stricter environmental regulations are introduced at a provincial or regional level (e.g. a landfill ban on organics), investments in new processing facilities are less likely to occur without the City's involvement as landfilling is the more cost-efficient means of disposal.

### 11.2. GHG Emissions

A benefit of Collections not being privatized is that transportation-related greenhouse gases (GHGs) and other pollutant emissions are minimized, as centrally-coordinated collection is more efficient than having multiple service providers on the same collection route. Reducing GHG emissions is a key initiative for the City of Edmonton. The City is also an active participant in the Capital Region Air Quality Management Framework, which addresses pollutants that impact air quality at a more local level. Transportation planning in the region plays a key role in the management of engine exhaust-related emissions. While quantifying the benefits of emissions reductions is outside the scope of this business case, the environmental benefits of streamlining collections to be under a single service provider are clear.

## 12. Identification of Preferred Alternative and Recommendation

### 12.1. Preferred Alternative

The preferred alternative is Alternative 5 (City Managed Services) because it has the highest total score in Stage 1, presents the lowest risk and has an acceptable NPV. Readers are reminded that the NPVs presented for Alternatives 1, 2, 3 and 4 do not include costs for the service elements that are privatized, therefore their NPVs cannot be compared directly with the NPV for Alternative 5.

Alternative 5 is also the only Alternative for which a diversion rate can be estimated. There is currently not sufficient private processing capacity to manage all of the recycling and organics generated by communal collection customers. This means that the diversion rate for any Alternative with private processing could not be estimated, but is likely to fall short of the rate that can be achieved with Alternative 5, at least until such time as private sector investments in suitable processing capacity can be achieved.

In addition, Administration expects that if some or all of the services are privatized, the program elements highlighted in the *Business Case for Residential Communal Collection* would change. Enforceability, although accounted for from a resource and staffing perspective, would look different in reality and be less effective, resulting in an overall change in the program and its results.

## 12.2. Recommendations

Administration recommends that the recommendations in Table 17 be approved.

The recommendations are adapted from the *Business Case for Residential Communal Collection*. They address the logistics of the program, the enforcement of the program through planning and development mechanisms, along with continuous improvement through regular program review and advocacy for provincial policies that will support diversion across sectors. Making only one major change to services at a time is preferred to minimize disruption and increase the likelihood of a successful transition to a three-stream collection program.

Table 17: Recommended Alternative and Associated Actions

| Recommendations |
| --- |
| 1. Mandatory co-location and voluntary chute closure (presented as Alternative 2 in the *Business Case for Residential Communal Collection* and as Alternative 5 in this business case);<br>2. Enforceable developer standards: Waste Services' comprehensive developer standards will be completed and referenced to the Zoning and Waste Bylaws to ensure all new properties comply;<br>3. Regular program review: Waste Services will introduce provisions to review the program every six to nine years to evaluate program success in achieving diversion and contamination rate targets. This timing would align with the regular waste characterization studies, which are planned for every three years. Among other aspects, this review will include a review of volume allocations, container types, and the effectiveness of regulatory and enforcement measures to ensure that the solutions remain relevant and effective as Edmonton grows and changes (this review would be in addition to the continuous improvement that is achieved through ongoing performance management activities and the annual business planning cycle); and<br>4. Landfill bans: Waste Services recommends that City Council advocate for landfill bans for recyclables and organic waste to be implemented at a provincial level. |

If the privatization of services is preferred at this time or considered in the future, attention must be given to the impact of privatization on the diversion rate, affordability, accessibility and dependability of service, as described in the City's Waste Management Policy. Priority should be given to privatizing services that positively impact these parameters. Reducing total waste generation and increasing the diversion rate are City Council's primary goals for Waste Services. Privatizing collection service is not expected to have any impact on waste reduction or the diversion rate. Cost savings from privatizing collection service are also expected to be minimal on a system-wide basis. As a Utility, Waste Services cannot make a profit. Some properties are easier and less expensive to collect from, and some properties are more challenging and cost more to service. If the collection service was privatized, some properties might be able to obtain collection services at a cost lower than the City's cost, but this is not expected to be consistent across the City. The highest amount of savings communal customers would experience is $2.41 per month, as outlined in Figure 1 in Section 9.3. However, the communal customer would have to reacquire collection service, container provision and an adequate education program for less than $2.41 to truly experience savings. It is unlikely that these services could be re-acquired for this amount, and therefore there is little apparent cost advantage of privatizing collection on a City-wide basis.

If City Council deems that a privatization alternative warrants further consideration, City Council would need to provide additional instructions. After receiving those instructions from City Council, Administration would prepare further analysis as described in Section 13.2 and present recommendations to City Council in the future. The specific instructions that would be required relate to the following:

- Whether the implementation of the three-stream source-separated program should be paused until a final decision is made, or if Waste Services should continue to manage the transition to three-stream collection (as described in Section 13.1) while undertaking additional analysis of privatization; and
- Whether a fully private model with limited regulation (i.e. a permit system that is unable to regulate the rate, as described in Section 5.1) and limited scope for an accountability framework, or a franchise model that establishes a new, parallel waste utility is preferred. Under a franchise model, a new waste utility would operate alongside, but separate from, the current Waste Utility.

# 13. Implementation Approach

Two approaches to implementation are presented below. The first approach is if the recommended Alternative is approved by Council. The second approach is if City Council approves further work in support of developing a privatization Alternative.

## 13.1. Recommended Alternative (Alternative 5)

The following implementation approach is adapted from the *Business Case for Residential Communal Collection* presented in 2021.

Preparation will begin in 2022, so that three-stream collection can commence in late 2023 or early 2024. Implementing source separation for properties receiving communal collection requires more time and resources than the curbside program, as the City will need to work with property managers and/or condo boards at each property to make decisions regarding container

type, size, placement and collection frequency.

Changes to communal collection will be implemented in phases. Each phase is expected to include approximately 100 properties and will take approximately six weeks. During this period, the properties will be provided with new containers and education materials. Phases will be determined by geographic area, beginning with areas currently serviced by City crews. Property assessments will start in 2022 or early 2023 to prepare for the first phases of rollout, and will continue as a parallel process during the phased implementation.

The City will advise properties which containers have been determined to be optimal for their property. This approach to phased notification will provide properties with as much time as possible to plan for changes and engage with the City about modifying the assigned containers. Providing a long notice period to properties was one of the requests made by property managers during the engagement activities. A deadline will be set for properties to approach the City requesting changes to their containers.

The approach to education and outreach will be as described in the *Business Case for Residential Communal Collection*.

## 13.2. Privatization Alternative

If City Council directs Administration to pursue privatizing or franchising some or all of the services, additional work will be required before making any final decisions. Depending on the direction, the following work may be required:

- The development of accurate cost estimates for collection from a range of property types. This will require active participation of private haulers;
- The development of accurate cost estimates for private processing for a range of contamination scenarios. This will require active participation of private processors;
- Comprehensive public engagement with communal collection customers, represented by property managers, condo boards and residents. This will let City Council hear directly from impacted Edmontonians and enable the development of a social score, which can be used in the evaluation of options;
- Analysis of timing of privatization, with a goal of minimizing stranded costs while proceeding with source separation close to the original timeline;
- An updated list of stranded costs, impacted positions and options for funding stranded costs;
- Developing a mechanism to fund shared waste services that are the responsibility of all Edmonton residents;
- Drafting a reporting mechanism for data sharing; and
- Drafting an accountability framework, including enforcement mechanisms, that is appropriate for privatizing or franchising selected services, for City Council to review.

Once this work is completed, a final decision can be made and an implementation approach can be developed.

## 13.3. Additional Implementation Steps

The following steps were identified for the successful implementation of the recommended alternative in the *Business Case for Residential Communal Collection*. Many of the steps would still be necessary if one of the privatization alternatives presented in this business case was selected.

- **Variable Pricing Details:** Waste Services will continue working on the details of a variable pricing program and present it at a later date. Variable pricing is currently part of the curbside collection program, allowing rates to be set based on the size of container at a property;
- **Excess Waste Program:** Waste Services will continue working on an excess waste program that would charge properties for additional service above and beyond the allocated amount of waste collected as part of the regular service standard;
- **Stakeholder Working Groups:** Waste Services will evaluate and consider the creation of a stakeholder working group consisting of property managers and condo board members during the implementation phase. Stakeholder working groups can contribute to better stakeholder relationships, collaboratively work towards informing further program iterations and overcoming implementation challenges;
- **Illegal Dumping:** Although planning and funding an illegal dumping strategy was not in scope for this business case, it was identified by many stakeholders as one of the primary concerns for properties with communal collection. As illegal dumping has a scope beyond the communal collection program, Waste Services will consider conducting further study of potential programs to reduce illegal dumping, with particular attention to managing the impacts and associated costs to properties that receive communal collection, and make recommendations at a future date;
- **Bin Aesthetics:** Waste Services will investigate options to improve the aesthetics of front load bins and work with Development Services to determine if changes to current screening requirements would be possible and under what conditions;
- **Regular Waste Characterization Studies:** Waste Services will conduct regular and frequent waste characterization studies and audits to ensure updated data is available to measure progress against program success measures. These studies will look at contamination levels in all the streams and will assist with benchmarking and education planning; and
- **Communal versus Curbside Collection:** Waste Services will develop a protocol to assess the type of service (communal versus curbside) offered to multi-unit properties. Where possible, depending on property layout and operational logistics, curbside collection will be prioritized over communal collection to achieve the policy objectives outlined in the Waste Strategy.

## 13.4. Project Responsibility and Accountability for Implementation

The Waste Services communal collection program is sponsored by the Branch Manager of Waste Services. The program oversight and implementation is provided by the Director of Waste

Strategy and Director of Collection Services. Once implementation is complete, the ongoing oversight will be provided by the Director of Collection Services.

# 14. Review and Approval Process

Information to complete the business case was gathered and analyzed by a dedicated team which included subject matter experts from Waste Services under the supervision of the Director of Waste Strategy and the Waste Services Leadership Team.

Table 18 shows the review and approval process which was followed for this business case.

Table 18: Business Case Review and Approval Process

| Review Step | Reviewer |
|---|---|
| Review 1 | • Project working team and the Director of Waste Strategy. |
| Review 2 | • Director of Business Integration (Waste Services);<br>• Director of Collection Services (Waste Services);<br>• Director of Sustainable Waste Processing (Waste Services);<br>• Director of Technical Services (Waste Services);<br>• General Supervisor Business Strategy, Planning & Performance (Waste Services);<br>• Finance Manager (Waste Services);<br>• Strategic Coordinator (Waste Services);<br>• Research, Engagement and Communications;<br>• Legal Services; and<br>• Branch Manager of Waste Services. |
| Review 3 | • City Operations Deputy City Manager. |
| Review 4 | • Office of the City Clerk. |
| Review 5 | • Office of the City Manager. |

## 14.1. Business Case Sign Off

The business case will be approved (signed and dated) by the Branch Manager of Waste Services in addition to Directors of Waste Strategy, Collection Services, Technical Services, Sustainable Waste Processing Services and Business Integration, as well as the Finance Manager for Waste Services. Final approval will be received from the City Operations Deputy City Manager, Office of the City Clerk, and the office of the City Manager prior to submission to Utility Committee and City Council.

# Appendices

Appendix A - Definitions of the Details Options
Appendix B - Detailed Results of Stage 1 Analysis
Appendix C - Detailed Package Combinations
Appendix D - Assumptions for Alternatives
Appendix E - List of Stranded Assets and Remaining Life
Appendix F - Summary of Personnel Costs Allocated to the Communal Service
Appendix G - Detailed Alternative Cost Comparison Summary
Appendix H - Comparison of Revenue Requirement for Alternatives
Appendix I - Risk Registers for High Risks

## Appendix A - Definitions of the Details Options

The definitions of the detailed options used in Stage 1 are outlined in Table A1 below.

Table A1: Detailed Options and Definitions for Stage 1

| Service | Detailed Options | Definition |
|---|---|---|
| Collections | Properties contract hauler(s) with regulated rates | Contract is between the property and hauler. The collection portion of the rate is negotiated (with an upper limit in place by the City to keep it regulated); all other aspects of the rate are regulated (processing, drop-off, etc.). City crews are not a collection option for properties. |
| | Properties contract hauler(s) with fixed rates | Contract is between the property and hauler. The entire rate is regulated. City forces are not a collection option for properties (ie. every property is charged the same rate, but has the option of choosing a service provider). |
| | Properties contract hauler(s) with submitted rates | City forces are not a collection option for properties. Haulers will each submit their own collection rate to the City for approval; each Hauler's approved rate will apply Citywide. Regardless of where the property is, the approved rate will be charged. All other aspects of the rate are regulated. |
| | Properties contract own hauler(s), City or private | Contract is between the property and hauler. A property can choose to contract with the City or another hauler for collection. The collection portion of the rate is negotiated (with an upper limit in place by the City to keep it regulated); all other aspects of the rate are regulated. |
| | City contracts hauler(s) for collection | Collection of the entire City is contracted to one or several entities. Contract is between the City and hauler(s). Entire rate is regulated (ie. Status Quo without City forces). |
| | Status Quo: current contractor/City split for communal waste collection | Current collection model. Contract is between the City and haulers, with roughly 50% of units collected by the City and 50% by its contractors. Always consists of a combination of both City and Contractor forces. |
| Processing | Processing at EWMC is not mandatory | All communal waste collected in the City of Edmonton will not be required to be brought to the EWMC. Communal ratepayers will no longer pay processing fees in their regulated rates and a tip fee will be charged to communal collection haulers that decide to use the EWMC. |
| | Processing includes EWMC up to tonnage | Curbside waste will be prioritized at the EWMC for processing; excess capacity will be allocated for communal waste up to the processing cap for facilities. After capacity is met, communal waste will be sent |

| Service | Detailed Options | Definition |
|---|---|---|
| | requirements then excludes EWMC | to another processing facility of the City's choosing. City maintains a contract with third-party processors and processing is part of the utility rate. |
| | Status Quo: all garbage brought to IPTF at EWMC | The current processing model for communal waste. All waste is required to be brought to the EWMC. Investments in additional processing capacity to be made as required and/or waste to be distributed to other facilities and processing partners. Decisions are managed by Waste Services. |
| Container Provision | City provides no containers | The City of Edmonton provides no collection containers whatsoever. This includes through contractors acting on the City's behalf. |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | The City of Edmonton will only provide bins and carts to properties, and any specialty containers other than this will be provided by other entities. |
| | City provides containers only to properties it collects from | The City of Edmonton provides collection containers to properties that it collects from. |
| | Status Quo: City provides waste containers (carts and bins) to all communal collection properties | Current provision model, where the City of Edmonton supplies all bins and carts to communal collection properties regardless of who is contracted to collect waste. |
| Education and Outreach | City provides no education or outreach programs, left to multiple entities | The City is not responsible for the provision of any education related to waste, and education and outreach is left to other multiple entities. |
| | City provides no education or outreach programs, left to single entity | The City is not responsible for the provision of any education related to waste, and education and outreach is left to another single entity. |
| | City provides education and | The City is responsible for education and outreach to properties it is responsible to collect from, and all other properties will be excluded |

| Service | Detailed Options | Definition |
|---|---|---|
| | outreach only to properties it collects from | from the City's responsibility for education and outreach. |
| | City provides education and outreach only to particular streams (one or two of garbage, recycle, organics) | The City will provide education and outreach for up to two of the collection streams: Garbage, Recycle, Organics. This option is likely in the instance that one or two streams are privatized. |
| | City provides education material, distribution is left to anyone | The City is responsible for designing and creating education materials and then shares these materials online. The distribution of these materials is left to whomever wishes to use them. |
| | Status Quo: City provides all education and outreach programs | Current education model, where the City provides all education and outreach for the entire communal customer base regardless of stream or collector. |

## Appendix B - Detailed Results of Stage 1 Analysis

The total score for the detailed options evaluated in Stage 1 are presented in Table B1 below. Option performance is judged by comparing the score to other options within the same service.

Table B1: Stage 1 Total Scores

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| **Collections** | | | |
| Garbage | Properties contract hauler(s) with regulated rates | N/A | 14 |
| | Properties contract hauler(s) with fixed rates | N/A | 14.5 |
| | Properties contract hauler(s) with submitted rates | N/A | 15.5 |
| | Properties contract own hauler(s), City or private | N/A | 15.5 |
| | City contracts hauler(s) for collection | N/A | 16.5 |
| | Status quo: current 70/30 (contractor/City) split for communal garbage collection | N/A | 18 |
| Recycle | Properties contract hauler(s) with regulated rates | N/A | 14 |
| | Properties contract hauler(s) with fixed rates | N/A | 14.5 |
| | Properties contract hauler(s) with submitted rates | N/A | 15.5 |
| | Properties contract own hauler(s), City or private | N/A | 15.5 |
| | City contracts hauler(s) for collection | N/A | 15 |
| | Status quo: current 50/50 (contractor/City) split for communal recycle collection | N/A | 18 |
| Organics | Properties contract hauler(s) with regulated rates | N/A | 15 |
| | Properties contract hauler(s) with fixed rates | N/A | 15.5 |
| | Properties contract hauler(s) with submitted rates | N/A | 16.5 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | Properties contract own hauler(s), City or private | N/A | 15.5 |
| | City contracts hauler(s) for collection | N/A | 16 |
| | Status quo: proposed 50/50 (contractor/City) split for communal organics collection | N/A | 18 |
| **Processing** | | | |
| Garbage | Processing at EWMC is not mandatory | Properties contract hauler(s) with regulated rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract hauler(s) with fixed rates | 14 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with submitted rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract own hauler(s), City or private | 15 |
| | Processing at EWMC is not mandatory | City contracts hauler(s) for collection | 20 |
| | Processing at EWMC is not mandatory | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 20 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with regulated rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with fixed rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with submitted rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract own hauler(s), City or private | 17 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | City contracts hauler(s) for collection | 17.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 17.5 |
| | Status quo: all garbage brought to IPTF at EWMC | Properties contract hauler(s) with regulated rates | 16.5 |
| | Status quo: all garbage brought to IPTF at EWMC | Properties contract hauler(s) with fixed rates | 16.5 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | Status quo: all garbage brought to IPTF at EWMC | Properties contract hauler(s) with submitted rates | 16.5 |
| | Status quo: all garbage brought to IPTF at EWMC | Properties contract own hauler(s), City or private | 17 |
| | Status quo: all garbage brought to IPTF at EWMC | City contracts hauler(s) for collection | 18 |
| | Status quo: all garbage brought to IPTF at EWMC | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 18 |
| Recycle | Processing at EWMC is not mandatory | Properties contract hauler(s) with regulated rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract hauler(s) with fixed rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract hauler(s) with submitted rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract own hauler(s), City or private | 15 |
| | Processing at EWMC is not mandatory | City contracts hauler(s) for collection | 18 |
| | Processing at EWMC is not mandatory | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 19 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with regulated rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with fixed rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with submitted rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract own hauler(s), City or private | 17 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | City contracts hauler(s) for collection | 17.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 17.5 |
| | Status quo: most recycling brought to MRF at EWMC | Properties contract hauler(s) with regulated rates | 16.5 |
| | Status quo: most recycling brought to | Properties contract hauler(s) with fixed | 16.5 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | MRF at EWMC | rates | |
| | Status quo: most recycling brought to MRF at EWMC | Properties contract hauler(s) with submitted rates | 16.5 |
| | Status quo: most recycling brought to MRF at EWMC | Properties contract own hauler(s), City or private | 17 |
| | Status quo: most recycling brought to MRF at EWMC | City contracts hauler(s) for collection | 18 |
| | Status quo: most recycling brought to MRF at EWMC | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 18 |
| Organics | Processing at EWMC is not mandatory | Properties contract hauler(s) with regulated rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract hauler(s) with fixed rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract hauler(s) with submitted rates | 14 |
| | Processing at EWMC is not mandatory | Properties contract own hauler(s), City or private | 15 |
| | Processing at EWMC is not mandatory | City contracts hauler(s) for collection | 18 |
| | Processing at EWMC is not mandatory | Status quo: proposed 50/50 (contractor/City) split for communal organics collection | 19 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with regulated rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with fixed rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract hauler(s) with submitted rates | 16.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Properties contract own hauler(s), City or private | 17 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | City contracts hauler(s) for collection | 17.5 |
| | Processing includes EWMC up to tonnage requirements then excludes EWMC | Status quo: proposed 50/50 (contractor/City) split for communal organics collection | 17.5 |
| | Status quo: all organics brought to EWMC & excess processed via regional | Properties contract hauler(s) with regulated rates | 16.5 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | partners | | |
| | Status quo: all organics brought to EWMC & excess processed via regional partners | Properties contract hauler(s) with fixed rates | 16.5 |
| | Status quo: all organics brought to EWMC & excess processed via regional partners | Properties contract hauler(s) with submitted rates | 16.5 |
| | Status quo: all organics brought to EWMC & excess processed via regional partners | Properties contract own hauler(s), City or private | 17 |
| | Status quo: all organics brought to EWMC & excess processed via regional partners | City contracts hauler(s) for collection | 18 |
| | Status quo: all organics brought to EWMC & excess processed via regional partners | Status quo: proposed 50/50 (contractor/City) split for communal organics collection | 18 |
| **Container Provisions** | | | |
| Garbage | City provides no containers | Properties contract hauler(s) with regulated rates | 16 |
| | City provides no containers | Properties contract hauler(s) with fixed rates | 16 |
| | City provides no containers | Properties contract hauler(s) with submitted rates | 16 |
| | City provides no containers | Properties contract own hauler(s), City or private | 15.5 |
| | City provides no containers | City contracts hauler(s) for collection | 16 |
| | City provides no containers | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 16 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract hauler(s) with regulated rates | 15 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract hauler(s) with fixed rates | 15 |
| | City provides only status quo containers (bins/carts) but not specialty containers | Properties contract hauler(s) with submitted rates | 15 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | (underground, etc.) | | |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract own hauler(s), City or private | 15.5 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | City contracts hauler(s) for collection | 16 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 17 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with regulated rates | 16 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with fixed rates | 16 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with submitted rates | 16 |
| | City provides containers only to properties it collects from | Properties contract own hauler(s), City or private | 13.5 |
| | City provides containers only to properties it collects from | City contracts hauler(s) for collection | 18 |
| | City provides containers only to properties it collects from | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 18 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with regulated rates | 15.5 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with fixed rates | 15.5 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with submitted rates | 15.5 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract own hauler(s), City or private | 16 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | City contracts hauler(s) for collection | 18 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Status quo: current 70/30 (contractor/City) split for communal garbage collection | 18 |
| Recycle | City provides no containers | Properties contract hauler(s) with regulated rates | 16 |
| | City provides no containers | Properties contract hauler(s) with fixed rates | 16 |
| | City provides no containers | Properties contract hauler(s) with submitted rates | 16 |
| | City provides no containers | Properties contract own hauler(s), City or private | 15.5 |
| | City provides no containers | City contracts hauler(s) for collection | 16 |
| | City provides no containers | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 16 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | Properties contract hauler(s) with regulated rates | 15 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | Properties contract hauler(s) with fixed rates | 15 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | Properties contract hauler(s) with submitted rates | 15 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | Properties contract own hauler(s), City or private | 15.5 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | City contracts hauler(s) for collection | 16 |
| | City provides only status quo containers (bins) but not specialty containers (underground, etc.) | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 17 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with regulated rates | 14 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with fixed rates | 14 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | City provides containers only to properties it collects from | Properties contract hauler(s) with submitted rates | 14 |
| | City provides containers only to properties it collects from | Properties contract own hauler(s), City or private | 13.5 |
| | City provides containers only to properties it collects from | City contracts hauler(s) for collection | 18 |
| | City provides containers only to properties it collects from | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 18 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | Properties contract hauler(s) with regulated rates | 15.5 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | Properties contract hauler(s) with fixed rates | 15.5 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | Properties contract hauler(s) with submitted rates | 15.5 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | Properties contract own hauler(s), City or private | 16 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | City contracts hauler(s) for collection | 18 |
| | Status quo: City provides waste containers (bins) to all communal collection properties | Status quo: current 50/50 (contactor/City) split for communal recycle collection | 18 |
| Organics | City provides no containers | Properties contract hauler(s) with regulated rates | 16 |
| | City provides no containers | Properties contract hauler(s) with fixed rates | 16 |
| | City provides no containers | Properties contract hauler(s) with submitted rates | 16 |
| | City provides no containers | Properties contract own hauler(s), City or private | 15.5 |
| | City provides no containers | City contracts hauler(s) for collection | 16 |
| | City provides no containers | Status quo: proposed 50/50 (contractor/City) split for communal | 16 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | | organics collection | |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract hauler(s) with regulated rates | 15 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract hauler(s) with fixed rates | 15 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract hauler(s) with submitted rates | 15 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Properties contract own hauler(s), City or private | 15.5 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | City contracts hauler(s) for collection | 16 |
| | City provides only status quo containers (bins/carts) but not specialty containers (underground, etc.) | Status quo: proposed 50/50 (contractor/City) split for communal organics collection | 17 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with regulated rates | 14 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with fixed rates | 14 |
| | City provides containers only to properties it collects from | Properties contract hauler(s) with submitted rates | 14 |
| | City provides containers only to properties it collects from | Properties contract own hauler(s), City or private | 13.5 |
| | City provides containers only to properties it collects from | City contracts hauler(s) for collection | 18 |
| | City provides containers only to properties it collects from | Status quo: proposed 50/50 (contractor/city) split for communal organics collection | 18 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with regulated rates | 15.5 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with fixed rates | 15.5 |

| Stream | Option | Sub-Option | Total Score |
|---|---|---|---|
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract hauler(s) with submitted rates | 15.5 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Properties contract own hauler(s), City or private | 16 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | City contracts hauler(s) for collection | 18 |
| | Status quo: City provides waste containers (carts and bins) to all communal collection properties | Status quo: proposed 50/50 (contractor/city) split for communal organics collection | 18 |
| **Education and Outreach** | | | |
| All Streams | City provides no education or outreach programs, left to multiple entities. | N/A | 11 |
| | City provides no education or outreach programs, left to a single entity. | N/A | 12.75 |
| | City provides education and outreach only to properties it collects from | N/A | 9.5 |
| | City provides education material, distribution is left to anyone | N/A | 10.5 |
| | City provides education and outreach only to particular streams (one or two of garbage, recycle, organics) | N/A | 15 |
| | Status quo: City currently provides all education and outreach programs | N/A | 18 |

## Appendix C - Detailed Package Combinations

Table C1 shows all 16 package combinations and the rationale as to why some were eliminated from the list of viable alternatives.

Table C1: Package Combinations

| # | Packages | | | | Elimination Rationale | Package Number | Package Name |
|---|---|---|---|---|---|---|---|
| 1 | C1 | P1 | CP1 | EO1 | Identified as a viable alternative. | 1 | Full Privatization |
| 2 | C1 | P1 | CP2 | EO1 | City would not provide containers to properties it does not collect from and has no contractual relationship with hauler due to logistical complexity. | - | - |
| 3 | C1 | P2 | CP1 | EO1 | Identified as a viable alternative. | 2 | Privatization with City Processing |
| 4 | C1 | P2 | CP2 | EO1 | City would not provide containers to properties it does not collect from and has no contractual relationship with hauler due to logistical complexity. | - | - |
| 5 | C2 | P1 | CP1 | EO1 | If the City is a collector, it would bring waste to the EWMC for processing. Also, it would not be reasonable to provide collection services without containers (logistical challenges, resident interest, etc.) | - | - |
| 6 | C2 | P1 | CP2 | EO1 | If the City is a collector, it would bring waste to the EWMC for processing. | - | - |
| 7 | C2 | P2 | CP1 | EO1 | The City would not provide collection services without containers (logistical challenges, resident interest, etc.) | - | - |
| 8 | C2 | P2 | CP2 | EO1 | The City would not provide collection service, processing service and containers and rely on others for education. | - | - |
| 9 | C1 | P1 | CP1 | EO2 | Identified as a viable alternative. | 3 | Privatization with City Education |

| # | Packages | | | | Elimination Rationale | Package Number | Package Name |
|---|---|---|---|---|---|---|---|
| 10 | C1 | P1 | CP2 | EO2 | City would not provide containers to properties it does not collect from and has no contractual relationship with hauler due to logistical complexity. | - | - |
| 11 | C1 | P2 | CP1 | EO2 | Identified as a viable alternative. | 4 | Private Collection |
| 12 | C1 | P2 | CP2 | EO2 | City would not provide containers to properties it does not collect from and has no contractual relationship with hauler due to logistical complexity. | - | - |
| 13 | C2 | P1 | CP1 | EO2 | If the City is a collector, it would bring waste to the EWMC for processing. Also, it would not be reasonable to provide collection services without containers (logistical challenges, resident interest, etc.) | - | - |
| 14 | C2 | P1 | CP2 | EO2 | If the City is a collector, it would bring waste to the EWMC for processing. | - | - |
| 15 | C2 | P2 | CP1 | EO2 | It would not be reasonable to provide collection services without containers (logistical challenges, resident interest, etc.) | - | - |
| 16 | C2 | P2 | CP2 | EO2 | Identified as a viable alternative. | 5 | City Managed Services |

## Appendix D - Assumptions for Alternatives

Table D1 lists the assumptions used in the cost analysis of Alternatives 1 through 4.

Table D1: Alternatives 1 through 4 Assumptions for Cost Analysis

| # | Assumption |
|---|---|
| 1 | Enforcement scope excludes vehicle weights and includes enforcement of regulations related to properties, haulers and processors. |
| 2 | No impact on the volume of public inquiries due to privatization. |
| 3 | In situations where assets are required for privatized services, all existing assets are stranded and new assets are acquired for ease of calculation (e.g. light duty vehicles). |
| 4 | Stranded costs analysis based on an asset list provided by Financial Services, accurate to year-end 2020. The list of assets is assumed to be accurate and complete as of this date. Operating and Maintenance (O&M) costs associated with these assets are not within the scope of the analysis for simplicity (e.g. cost of utilities for stranded buildings). |
| 5 | The asset list allocates a percentage of each asset funded by the communal customer base, based on ratios applied by a 2017 Cost of Service Study. The percentage allocation to the communal customer base and thus each asset value associated with the communal service is assumed to be representative. |
| 6 | The asset list includes entries financed by third parties and assets inherited by Waste Services. These assets are excluded from cost analysis and are assumed to have no net cost to the Utility. |
| 7 | Stranded costs analysis using the communal collection asset list is based on the 2022 Net Book Value (NBV) of assets and remaining life expectancy. It is assumed these values are accurate for assets considered and contingency is removed for assets. |
| 8 | The collection contracts are assumed to be terminated and would not result in any termination penalties. It is also assumed the contractors associated with these contracts do not allege damages or in any way pursue a lawsuit with the City of Edmonton, resulting in additional costs. |
| 9 | Contingencies for stranded and eliminated personnel are removed. |
| 10 | Fuel and maintenance cost savings are projected using 2021 year-end actuals for the communal collection fleet from Fleet and Facility Services' Facts, Analytics and Strategic Technology (FAST) tool for data management. |
| 11 | A 39.5% Collections/60.5% Processing split was assessed to stranded communal service personnel that did not explicitly belong to one of the four service categories (Processing, Collection, Container Provision, Education and Outreach). This ratio is based on O&M cost allocations indicated in a 2017 Cost of Service Study. |

| # | Assumption |
|---|---|
| 12 | With a few exceptions, personnel assigned to the category in Assumption #15 include Branch Administration, Business Strategy, Business Integration, Safety/OHS, Workforce Development, BPCO (Business Performance and Central Operations) Collections, as these areas both support Collections and Processing. Exceptions are Waste Call Centre (Waste Hotline), Community Relations, Reuse Centre and Compost Programs, as these services/programs are more appropriately categorized under Education and Outreach. |
| 13 | It is assumed the average age of the communal collection fleet remains consistent, which equates to an unchanging maintenance and fuel savings year after year in privatized collection options (C1). |
| 14 | The privatization of processing services is expected not to impact existing processing contracts and is assumed to result in no net cost to the Waste Utility. The savings/expenses accrued due to loss of feedstock is negated as these contracts are volume based. Any preferential rates from more feedstock are not factored in. |
| 15 | Waste characterization studies are assumed to be required regardless of whether or not services are privatized. Cost for the study has been factored into the EO1/EO2 options. |
| 16 | The annual compounded inflation rate is calculated and averaged to 2.1% which is the 2022 CPI rate from the 2022 Rate Filing. |
| 17 | The weighted average cost of capital (WACC) is calculated to be 5.217% as of 2022. |
| 18 | Personnel that are considered stranded are assumed to be consistent throughout the cost analysis period of 24 years. Further analysis and planning to reflect workforce consolidation is required based on decisions with respect to which alternative to pursue. |
| 19 | The loans on the capital stranded assets are assumed to be repaid in full in 2022. This creates repayment penalties incurred. Additionally, there is one year of interest accrued for the capital loans, averaged to be 3.05%. |
| 20 | Capital stranded assets are assumed to not be salvageable. In reality, salvaging of these assets would reduce the amount of stranded capital. |

Table D2 lists the assumptions used in the cost analysis of Alternative 5.

Table D2: Alternative 5 Assumptions for Cost Analysis

| # | Assumption |
|---|---|
| 1 | Cart lifespan is 12 years (less than the Single-Unit Waste Set-out business case due to the shared nature of communal containers). |
| 2 | Organics carts are assumed to be coloured for costing purposes (similar to the curbside program). |

| # | Assumption |
|---|---|
| 3 | An extra supply of 20% has been approximated to account for inaccuracies in unit count, property count, and properties with space restrictions and differing container needs. The 20% was taken from the Association for the Advancement of Cost Engineering (AACE International) guidelines for a Class 3 estimate. |
| 4 | Service frequency is assumed to be weekly for all streams and hard volume limits are imposed (no extra lifts). |
| 5 | Volume allocation, assuming no contamination, is calculated to be:<br>Garbage = 0.09 $yd^3$ / week / unit<br>Recycle = 0.20 $yd^3$ / week / unit<br>Organics = 0.03 $yd^3$ / week / unit |
| 6 | Densities from the U.S. Environmental Protection Agency (converted to metric units) are taken as:<br>(Garbage) Mixed Multi-unit Solid Waste (Uncompacted) = 43.09 kg / $yd^3$<br>(Recycle) Mixed Single Stream Recycle (Uncompacted) = 23.133 kg / $yd^3$<br>(Organics) Food Scraps = 210.01 kg / $yd^3$<br>(Organics) Mixed Yard Waste = 113.398 kg / $yd^3$ |
| 7 | Organics container size volume allocation is based on a 90% capture rate (by weight), resulting in a total allocation of 0.0276 $yd^3$ / week / unit. |
| 8 | Recycling container size volume allocation is based on a 90% capture rate (by weight), resulting in a total allocation of 0.185 $yd^3$ / week / unit. |
| 9 | Garbage volume container size allocation is based on:<br>52% of organics to be in the garbage stream by weight to account for improper sorting.<br>15% of recycling to be in the garbage stream by weight to account for improper sorting and to not significantly increase the volume of the garbage allocation.<br>This results in the garbage container size to be increased by 23% above the 0.09 $yd^3$ / week / unit allocation, resulting in a total allocation of 0.125 $yd^3$ / week / unit. |
| 10 | Based on current in-field percentages, 20% of bins require casters. Only medium duty casters are used and no front load bin over 4 $yd^3$ in size will have casters. |
| 11 | None of the front load bins will be refurbishable due to end of life wear and tear. |
| 12 | Every unit will be given one food scraps pail. After the first initial purchase of food scraps pails, new purchases equate to 2% expected growth rate and a 5% surplus. |
| 13 | All front load bins are assumed to be flat top and not slanted-top (“cathedral style”) for costing purposes. |
| 14 | The number of 240L carts needed is assumed to be 25% of the 360L carts. The two different sizes will be used based on property space limitations. |

| # | Assumption |
|---|---|
| 15 | No more than four organics carts can be placed in a single “collection area” at a property. If five or more carts are required, a 2 $yd^3$ bin shall be allocated instead. It is assumed a property limit of 15 organics carts will satisfy all “collection areas” that a property requires. |
| 16 | No more than seven garbage carts per property are allowed, which services up to a potential seven "collection areas". These are for special cases where a frequency reduction for current garbage bins would be too low, or space is a primary concern. This is to ensure that existing front load bins are used as often as possible instead of replacing them with carts. This limit is separate from the organics cart limit of 15 outlined in Assumption 15. |
| 17 | The lifespan of new vehicles has been averaged to eight years instead of 10, to allot for reduced life expectancy due to dedicated organics collection. |
| 18 | Downtime for all collection vehicles is calculated at 15% based on historical data. |
| 19 | City contractor cost for servicing organics front load bins is assumed to be higher than the cost of servicing recycle and garbage front load bins. This is based on data from existing curbside program contracts. |
| 20 | The contractor organics cart (240L and 360L) servicing costs follow the same cost progression as garbage carts. |
| 21 | Contractor collection costs are a calculation of additional new cubic yards, based on an average of current rates across all service areas. The reduction in garbage contractor costs is due to an overall reduction in allocation. |
| 22 | Implementation will take four years to complete and will start in 2022. |
| 23 | For costing purposes, the growth rate of the communal customer base has been set to 2% per year. |
| 24 | Chute closure will have no impact on capital or operating cost estimations. |
| 25 | The communal Waste Bylaw will be updated in time for full program implementation. Costs and resources required for bylaw implementation are excluded from analysis. |
| 26 | Staffing and resource additions will be adequate to maintain the program during and after implementation. |
| 27 | The annual compounded inflation rate is calculated and averaged to 2.1% which is the 2022 CPI rate from the 2022 Rate Filing. |
| 28 | The weighted average cost of capital (WACC) is calculated to be 5.217% as of 2022. |

Table D3 lists the general assumptions used in the analysis of this business case.

Table D3: General Assumptions for Business Case Analysis

| # | Assumption |
|---|---|
| 1 | Three source-separated streams (garbage, recycle, organics) are collected from all communal properties. |
| 2 | Volume limits and allocations set by the City through its role as Utility Regulator are enforced. Mandatory co-location is assumed to be adhered to. |
| 3 | Transportation of waste from communal properties to the final processing and disposal facilities are included in the collection charges. |
| 4 | ICI waste is not collected or mixed with waste from residents receiving communal collection. |
| 5 | Scoring in Stage 1 analysis assumes processing facilities act in good faith at all times and process all materials in accordance with bylaws and regulations regardless of the City's ability to enforce its bylaws over facilities that are located outside its jurisdiction. |
| 6 | In Stage 1 analysis, it is assumed that processing facilities will have adequate capacity for all waste from the communal customer base. |
| 7 | In Stage 1 analysis, processing facilities are assumed to have equivalent technology and buildings (MRF, RDF, etc.). |

## Appendix E - List of Stranded Assets and Remaining Life

A summary list of assets which are considered stranded for the processing service category are provided in Table E1.

Table E1: Summary of Stranded Capital Assets for Processing

| Remaining Useful Life after 2021 in Years | Building/Facilities | Equip't - Auxiliary | Equip't - Bins | Equip't - Fleet Vehicles | Equip't - Light Duty Vehicles | Equip't - Mobile Equip't | Equip't - Processing | Total |
|---|---|---|---|---|---|---|---|---|
| 0 | $941,443 | $0 | | $0 | $0 | $0 | | $941,443 |
| 1 | $0 | $0 | | $0 | $0 | $0 | | $0 |
| 2 | $30,927 | $5,225 | | $2,657 | $3,944 | $25,912 | $8,452 | $77,116 |
| 3 | $218,652 | $14,492 | $6,798 | | $2,528 | | $10,614 | $253,084 |
| 4 | $38,196 | $27,187 | $2,404 | $209,934 | | $10,588 | | $288,308 |
| 5 | $266,789 | | | $72,014 | $8 | $4,406 | | $343,216 |
| 6 | $450,909 | $18,764 | | $404,764 | $418 | $1,820 | | $876,677 |
| 7 | $154,355 | | $1,625 | | $15,015 | $22,913 | $82,033 | $275,941 |
| 8 | $1,480,403 | | | | | | $107,989 | $1,588,392 |
| 9 | $260,515 | $23,637 | | | | | $812,940 | $1,097,091 |
| 10 | $448,751 | $3,951 | $8,557 | | | | $3,290 | $464,549 |
| 11 | $1,081,270 | $751,039 | | | | | $62,534 | $1,894,843 |
| 12 | $63,971 | $105,743 | | | | | $185,885 | $355,600 |
| 13 | $844,062 | $14,131 | | $52,188 | | $19,174 | $3,182,592 | $4,112,147 |
| 14 | $1,366,913 | $15,100 | | | | $52,545 | $222,744 | $1,657,302 |
| 15 | $573,992 | $112,603 | | | | | $196,380 | $882,975 |
| 16 | $358,380 | $1,704 | | | | | $83,212 | $443,297 |
| 17 | $145,555 | $7,950 | | | | | $583,143 | $736,648 |
| 18 | $147,413 | $86,065 | | | | | $92,230 | $325,708 |
| 19 | $321,746 | $46,632 | | | | | $91,509 | $459,886 |
| 20 | $555,185 | | | | | | | $555,185 |
| 21 | $246,349 | $1,339 | | | | | | $247,688 |
| 22 | $766,468 | | | | | | | $766,468 |
| 23 | $341,280 | | | | | | | $341,280 |
| 24 | $125,506 | $7,415 | | | | | | $132,920 |
| 25 | $164,530 | | | | | | | $164,530 |
| 26 | $240,478 | | | | | | | $240,478 |
| 27 | $560,097 | $115,702 | | | | | | $675,800 |
| 28 | $177,087 | | | | | | | $177,087 |
| 29 | $482,096 | $6,873 | | | | | $403,608 | $892,576 |
| 30 | $450,646 | | | | | | | $450,646 |
| 31 | $10,189 | | | | | | | $10,189 |
| 32 | $3,182 | | | | | | | $3,182 |

| Remaining Useful Life after 2021 in Years | Building/Facilities | Equip't - Auxiliary | Equip't - Bins | Equip't - Fleet Vehicles | Equip't - Light Duty Vehicles | Equip't - Mobile Equip't | Equip't - Processing | Total |
|---|---|---|---|---|---|---|---|---|
| 34 | $407,167 | | | | | | | $407,167 |
| 37 | $176,694 | | | | | | | $176,694 |
| 39 | $4,063,805 | | | | | | | $4,063,805 |
| 41 | $8,095 | | | | | | | $8,095 |
| 42 | $191,279 | | | | | | | $191,279 |
| 47 | $4,972 | | | | | | | $4,972 |
| 48 | $4,752,179 | | | | | | | $4,752,179 |
| 49 | $281,746 | | | | | | | $281,746 |
| 50 | $417,882 | | | | | | | $417,882 |
| 51 | $327,710 | | | | | | | $327,710 |
| 52 | $2,936 | | | | | | | $2,936 |
| 54 | $184,780 | | | | | | | $184,780 |
| 56 | $196,315 | | | | | | | $196,315 |
| 57 | $93,527 | | | | | | | $93,527 |
| Total | $24,426,422 | $1,365,552 | $19,384 | $741,556 | $21,914 | $137,359 | $6,129,154 | $32,841,341 |

A summary list of assets which are considered stranded for the collection service category are provided in Table E2.

Table E2: Summary of Stranded Capital Assets for Collections

| Remaining Useful Life after 2021 in Years | Building/Facilities | Equip't | Equip't - Auxiliary | Equip't - Bins | Equip't - Fleet Vehicles | Equip't - Light Duty Vehicles | Equip't - Mobile Equip't | Total |
|---|---|---|---|---|---|---|---|---|
| 0 | $3,554,937 | $0 | | $0 | $0 | $0 | | $3,554,937 |
| 1 | $0 | $0 | $0 | | $0 | | | $0 |
| 2 | | $19,662 | $7,799 | $1,800 | $36,326 | | $5,282 | $70,869 |
| 3 | $36,231 | | | | $5,901 | | | $42,132 |
| 5 | $16,258 | | | | | $130,974 | | $147,233 |
| 6 | $24,420 | | | $79,489 | | | $6,239 | $110,147 |
| 7 | $24,160 | | | $1,722 | | | $10,841 | $36,722 |
| 8 | $469,522 | | | | $1,227,467 | | | $1,696,989 |
| 9 | $126,203 | | $13,719 | $34,406 | | | | $174,328 |
| 10 | $3,559 | | | | | | | $3,559 |
| 11 | $61,900 | | | | | | | $61,900 |
| 12 | $18,354 | | | | | | | $18,354 |
| 13 | $57,173 | | | | | | $14,544 | $71,717 |
| 14 | $1,148,629 | | $219,123 | | | | | $1,367,752 |
| 15 | $61,566 | | | $8,162 | | | | $69,728 |
| 16 | $1,956,106 | | | | | | | $1,956,106 |

| Remaining Useful Life after 2021 in Years | Building/Facilities | Equip't | Equip't - Auxiliary | Equip't - Bins | Equip't - Fleet Vehicles | Equip't - Light Duty Vehicles | Equip't - Mobile Equip't | Total |
|---|---|---|---|---|---|---|---|---|
| 17 | $92,114 | | | | | | | $92,114 |
| 18 | $350,187 | | | | | | | $350,187 |
| 19 | $640,981 | | | | | | | $640,981 |
| 20 | $604,661 | | | | | | | $604,661 |
| 23 | $186,542 | | | | | | | $186,542 |
| 24 | $21,555 | | | | | | | $21,555 |
| 25 | $187,249 | | $61,902 | | | | | $249,151 |
| 28 | $176,801 | | | | | | | $176,801 |
| 38 | $106,920 | | | | | | | $106,920 |
| 48 | $533,137 | | | | | | | $533,137 |
| 51 | $168,116 | | | | | | | $168,116 |
| 54 | $645,971 | | | | | | | $645,971 |
| 60 | $1,098,111 | | | | | | | $1,098,111 |
| Total | $12,371,363 | $19,662 | $302,543 | $125,578 | $1,269,694 | $130,974 | $36,906 | $14,256,719 |

A summary list of assets which are considered stranded for the container provisions service category are provided in Table E3.

Table E3: Summary of Stranded Capital Assets for Container Provisions

| Remaining Useful Life after 2021 in Years | Equip't - Auxiliary | Equip't - Bins | Equip't - Fleet Vehicles | Total |
|---|---|---|---|---|
| 0 | | | $0 | $0 |
| 1 | | $0 | $0 | $0 |
| 3 | | $23,213 | | $23,213 |
| 4 | | $130,357 | | $130,357 |
| 5 | | $284,217 | | $284,217 |
| 6 | $7,469 | | | $7,469 |
| 7 | | $457,629 | | $457,629 |
| 8 | | $545,869 | $76,573 | $622,442 |
| 10 | | $525,849 | | $525,849 |
| 11 | | $499,847 | | $499,847 |
| 13 | | $200,319 | | $200,319 |
| 14 | | $133,094 | | $133,094 |
| Total | $7,469 | $2,800,394 | $76,573 | $2,884,436 |

## Appendix F - Summary of Personnel Costs Allocated to the Communal Service

Table F1 shows a summary of personnel costs allocated exclusively to the communal service.

Table F1: Personnel Costs Allocated Exclusively to the Communal Service

| Service Area | Bin Maintenance | Collections | Total |
|---|---|---|---|
| **Total Cost** | $334,801 | $2,438,502 | $2,783,303 |

Table F2 shows a summary of personnel costs allocated partially to the communal service.

Table F2: Personnel Costs Allocated Partially to the Communal Service

| Service Area | Collections | Education | Processing | Split[18] | Total |
|---|---|---|---|---|---|
| **Total Cost** | $1,910,484 | $525,227 | $4,701,646 | $1,311,337 | $8,448,694 |

[18] A 39.5% Collections / 60.5% Processing split was assessed to stranded communal sector personnel that did not explicitly belong to one of the four service categories (Processing, Collection, Container Provision, Education and Outreach). This ratio is based on O&M cost allocations indicated in a 2017 Cost of Service Study.

## Appendix G - Detailed Alternative Cost Comparison Summary

Table G1: Cost Comparison and Revenue Requirements for Program Alternatives

| Base Year | 2022 | 2022 | 2022 | 2022 | 2022 |
|---|---|---|---|---|---|
| **Cumulative Revenue Requirement (from base year)** | **Alternative 1** | **Alternative 2** | **Alternative 3** | **Alternative 4** | **Alternative 5** |
| CPV @ Year 5 | $66,433,900 | ($2,235,563) | $75,219,572 | $6,550,109 | $28,794,648 |
| CPV @ Year 10 | $74,373,412 | ($17,026,169) | $84,478,902 | ($6,920,679) | $43,840,718 |
| CPV @ Year 15 | $81,125,545 | ($29,819,512) | $93,697,527 | ($17,247,530) | $57,026,297 |
| CPV @ Year 20 | $86,709,771 | ($41,040,547) | $100,115,452 | ($27,634,866) | $68,173,380 |
| CPV @ Year 25 | $89,693,709 | ($46,987,156) | $103,584,007 | ($33,096,859) | $73,724,343 |
| **Capital Cost Summary (Base Year Dollars)** | **Alternative 1** | **Alternative 2** | **Alternative 3** | **Alternative 4** | **Alternative 5** |
| Equipment | $1,280,000 | $1,200,000 | $1,280,000 | $1,200,000 | $18,944,144 |
| Buildings | $0 | $0 | $0 | $0 | $0 |
| Other (engineering/PM, etc.) | $0 | $0 | $0 | $0 | $1,965,523 |
| **Total Base Costs** | **$1,280,000** | **$1,200,000** | **$1,280,000** | **$1,200,000** | **$20,909,666** |
| Contingency | $256,000 | $240,000 | $256,000 | $240,000 | $4,181,933 |
| Inflation | $181,276 | $169,946 | $181,276 | $169,946 | $3,919,107 |
| **Total Capital** | **$1,717,276** | **$1,609,946** | **$1,717,276** | **$1,609,946** | **$29,010,706** |
| **Economic Assumptions** | | | | | |
| Inflation (compounded each year) | | | | | 2.10% |
| Contingency based on Association for the Advancement of Cost Engineering (AACE International) guidelines for a Class 3 estimate | | | | | 20.00% |
| Analysis is based on 24 years to capture the full life cycle costs of the assets | | | | | |
| Assumes borrowing required at 55% (based on current Waste Utility split) at 4% | | | | | |

Table G2: Alternative Cost Summary

| | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| Total Capital Cost | ($1,717,276) | ($1,609,946) | ($1,717,276) | ($1,609,946) | ($29,010,706) |
| Total Costs Avoided | $264,244,689 | $264,244,689 | $264,244,689 | $264,244,689 | $0 |
| Total O&M Costs | ($62,998,917) | ($54,525,980) | ($99,016,717) | ($90,543,781) | ($92,306,052) |
| Total Lease Costs | $0 | $0 | ($1,242,000) | ($1,242,000) | ($1,242,000) |
| Total Stranded Capital Costs | ($55,006,963) | ($18,563,961) | ($55,006,963) | ($18,563,961) | $0 |
| Total Stranded Operating Costs | ($260,184,614) | ($90,961,332) | ($244,009,796) | ($74,786,515) | $0 |
| Project Net Inflows (Outflows) | ($115,663,080) | $98,583,470 | ($136,748,063) | $77,498,487 | ($122,558,758) |
| WACC Discount Rate | 5.22% | 5.22% | 5.22% | 5.22% | 5.22% |
| Net Present Value | ($85,363,470) | $44,547,632 | ($98,565,041) | $31,346,060 | ($71,499,083) |

Table G3: Alternative Cost Comparison Summary

| | Alternative 1 Net Change from Alternative 5 | Alternative 2 Net Change from Alternative 5 | Alternative 3 Net Change from Alternative 5 | Alternative 4 Net Change from Alternative 5 |
|---|---|---|---|---|
| Total Capital Cost | $27,293,431 | $27,400,761 | $27,293,431 | $27,400,761 |
| Total Costs Avoided | $264,244,689 | $264,244,689 | $264,244,689 | $264,244,689 |
| Total O&M Costs | $29,307,135 | $37,780,072 | -$6,710,665 | $1,762,271 |
| Total Lease Costs | $1,242,000 | $1,242,000 | $0 | $0 |
| Total Stranded Capital Costs | -$55,006,963 | -$18,563,961 | -$55,006,963 | -$18,563,961 |
| Total Stranded Operating Costs | -$260,184,614 | -$90,961,332 | -$244,009,796 | -$74,786,515 |
| Project Net Inflows (Outflows) | $6,895,679 | $221,142,228 | -$14,189,304 | $200,057,245 |
| Net Present Value | -$13,864,386 | $116,046,715 | -$27,065,958 | $102,845,144 |

## Appendix H - Comparison of Revenue Requirement for Alternatives

Table H1: Annual Cost Revenue Requirement Summary

| Year | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| 2022 | $57,212,948 | $14,986,016 | $60,847,925 | $18,620,993 | $7,150,229 |
| 2023 | $2,029,638 | -$3,876,600 | $3,506,785 | -$2,399,453 | $4,928,148 |
| 2024 | $2,061,930 | -$3,967,141 | $3,566,164 | -$2,462,906 | $5,456,708 |
| 2025 | $2,347,739 | -$3,806,742 | $4,130,701 | -$2,023,781 | $5,674,799 |
| 2026 | $2,128,480 | -$4,154,044 | $2,978,958 | -$3,303,566 | $4,847,521 |
| 2027 | $2,162,763 | -$4,250,491 | $2,373,486 | -$4,039,768 | $4,132,304 |
| 2028 | $2,464,296 | -$4,082,431 | $3,013,889 | -$3,532,838 | $4,496,733 |
| 2029 | $2,233,411 | -$4,449,590 | $2,523,278 | -$4,159,723 | $4,266,592 |
| 2030 | $2,269,803 | -$4,552,332 | $2,566,725 | -$4,255,410 | $4,678,458 |
| 2031 | $2,588,060 | -$4,376,128 | $3,172,397 | -$3,791,791 | $4,912,661 |
| 2032 | $2,344,790 | -$4,764,433 | $2,584,733 | -$4,524,490 | $4,190,480 |
| 2033 | $2,383,414 | -$4,873,887 | $2,629,985 | -$4,627,315 | $4,058,535 |
| 2034 | $2,752,452 | -$4,658,095 | $4,020,897 | -$3,389,650 | $5,133,246 |
| 2035 | $2,504,040 | -$5,061,368 | $3,496,105 | -$4,069,303 | $5,086,069 |
| 2036 | $2,545,546 | -$5,177,491 | $3,558,466 | -$4,164,571 | $5,396,413 |
| 2037 | $2,901,049 | -$4,982,925 | $4,246,244 | -$3,637,730 | $6,012,134 |
| 2038 | $2,631,088 | -$5,417,200 | $2,915,392 | -$5,132,896 | $5,503,692 |
| 2039 | $2,675,158 | -$5,540,893 | $2,968,018 | -$5,248,033 | $5,550,256 |
| 2040 | $3,050,847 | -$5,336,487 | $3,766,503 | -$4,620,832 | $5,744,114 |
| 2041 | $2,765,977 | -$5,796,236 | $3,161,743 | -$5,400,469 | $5,459,513 |
| 2042 | $2,812,761 | -$5,927,999 | $3,219,806 | -$5,520,954 | $5,509,624 |

| Year | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| 2043 | $3,209,922 | -$5,713,133 | $3,976,831 | -$4,946,223 | $5,780,765 |
| 2044 | $2,909,169 | -$6,200,006 | $3,250,687 | -$5,858,488 | $5,162,196 |
| 2045 | $2,958,828 | -$6,340,373 | $3,311,373 | -$5,987,827 | $5,002,798 |
| 2046 | $39,553 | $37,081 | $39,553 | $37,081 | $768,128 |
| 2047 | $0 | $0 | $0 | $0 | $348,767 |

Table H2: Cumulative Present Value Revenue Requirement Summary

| Year | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| 2022 | $57,212,948 | $14,986,016 | $60,847,925 | $18,620,993 | $7,150,229 |
| 2023 | $59,141,949 | $11,301,631 | $64,180,832 | $16,340,514 | $11,834,023 |
| 2024 | $61,004,474 | $7,718,145 | $67,402,119 | $14,115,790 | $16,763,024 |
| 2025 | $63,020,018 | $4,450,042 | $70,948,342 | $12,378,366 | $21,634,861 |
| 2026 | $64,756,722 | $1,060,606 | $73,378,982 | $9,682,867 | $25,590,130 |
| 2027 | $66,433,900 | -$2,235,563 | $75,219,572 | $6,550,109 | $28,794,648 |
| 2028 | $68,250,158 | -$5,244,433 | $77,440,895 | $3,946,305 | $32,108,870 |
| 2029 | $69,814,628 | -$8,361,302 | $79,208,413 | $1,032,483 | $35,097,552 |
| 2030 | $71,325,754 | -$11,392,028 | $80,917,215 | -$1,800,566 | $38,212,246 |
| 2031 | $72,963,328 | -$14,160,988 | $82,924,525 | -$4,199,792 | $41,320,694 |
| 2032 | $74,373,412 | -$17,026,169 | $84,478,902 | -$6,920,679 | $43,840,718 |
| 2033 | $75,735,654 | -$19,811,844 | $85,982,073 | -$9,565,425 | $46,160,377 |
| 2034 | $77,230,818 | -$22,342,175 | $88,166,271 | -$11,406,722 | $48,948,816 |
| 2035 | $78,523,597 | -$24,955,245 | $89,971,231 | -$13,507,612 | $51,574,638 |
| 2036 | $79,772,643 | -$27,495,729 | $91,717,294 | -$15,551,078 | $54,222,543 |
| 2037 | $81,125,545 | -$29,819,512 | $93,697,527 | -$17,247,530 | $57,026,297 |

| Year | Alternative 1 | Alternative 2 | Alternative 3 | Alternative 4 | Alternative 5 |
|---|---|---|---|---|---|
| 2038 | $82,291,712 | -$32,220,557 | $94,989,705 | -$19,522,564 | $59,465,677 |
| 2039 | $83,418,621 | -$34,554,656 | $96,239,981 | -$21,733,296 | $61,803,720 |
| 2040 | $84,640,066 | -$36,691,186 | $97,747,948 | -$23,583,304 | $64,103,448 |
| 2041 | $85,692,551 | -$38,896,719 | $98,951,027 | -$25,638,244 | $66,180,855 |
| 2042 | $86,709,771 | -$41,040,547 | $100,115,452 | -$27,634,866 | $68,173,380 |
| 2043 | $87,813,062 | -$43,004,224 | $101,482,340 | -$29,334,946 | $70,160,303 |
| 2044 | $88,763,401 | -$45,029,583 | $102,544,243 | -$31,248,741 | $71,846,640 |
| 2045 | $89,682,038 | -$46,998,098 | $103,572,335 | -$33,107,800 | $73,399,874 |
| 2046 | $89,693,709 | -$46,987,156 | $103,584,007 | -$33,096,859 | $73,626,532 |
| 2047 | $0 | $0 | $0 | $0 | $73,724,343 |

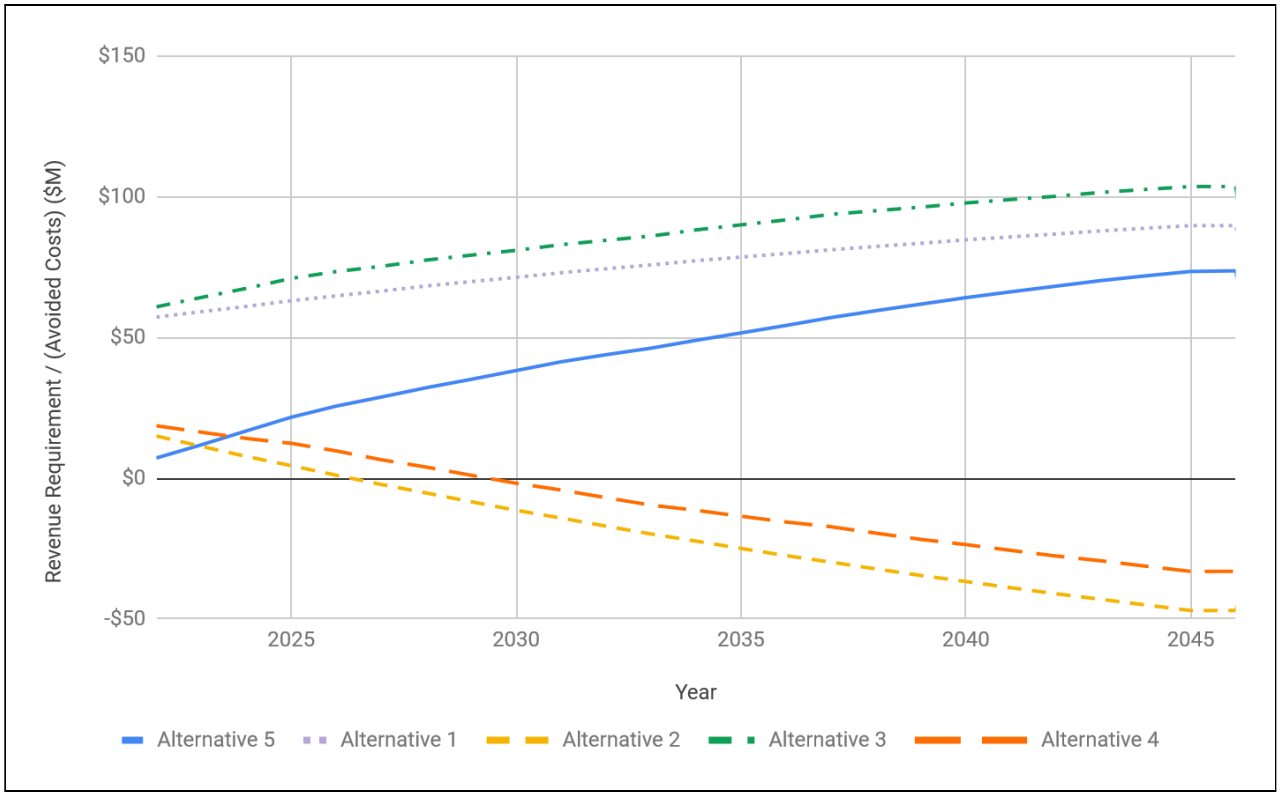



Figure H1: Cumulative Present Value of Revenue Requirement for Program Alternatives

## Appendix I - Risk Registers for High Risks

The risk scores presented are calculated by multiplying the risk likelihood by the impact it causes. Risk scores are based on risk impacts before mitigation strategies are in place. Upon a decision from City Council, mitigation strategies will be developed for the risks associated with the approved alternative.

Table I1 shows high risks pertaining to the condensed Collection options C1 and C2.

Table I1: High Risks for Condensed Collection Options

| Risk | Stakeholder(s) Impacted | C1- Collection contract between property and haulers | C2 - Collection contract between City and haulers |
|---|---|---|---|
| | | Score | Score |
| Collection costs will rise once the City eliminates collection assets. The City will no longer act as a balance for the service. Competition in the market will act as some measure of control against this. This could impact properties differently based on size and location. | • Properties<br>• Residents | High | Medium |
| The inability to enforce missed collections, property damage charges, enforce required service levels and other issues related to the collector/collection. Properties may have less negotiating power than the City. | • Properties<br>• City of Edmonton | High | Low |
| The City will be less efficient and lose competitiveness if it is expected to collect from properties that cannot secure other contracts (e.g. properties that are far from processing sites or difficult to service, etc.). | • City of Edmonton<br>• Residents | High | Negligible |
| The inability to enforce waste room tidiness, co-location of streams, etc. (all items related to the responsibility of the property manager). | • The Strategy Goals<br>• Residents | High | Medium |

| Risk | Stakeholder(s) Impacted | C1- Collection contract between property and haulers | C2 - Collection contract between City and haulers |
|---|---|---|---|
| | | Score | Score |
| Multiple haulers will be collecting from the same properties/areas due to properties having contracts with different haulers increasing GHG emissions and traffic. | • The Environment<br>• Residents<br>• The City of Edmonton | High | Low |
| The inability to influence the reduction of GHG emissions created by collection vehicles due to lack of control over the number and type of vehicles. | • City of Edmonton | High | Medium |
| Lack of flexibility in servicing options (e.g. type of containers, vehicle sizes, etc.). | • Properties<br>• Residents | Low | High |
| More vehicles operating above the allowable weight limits in order to minimize trips causing safety concerns and excess wear and tear. | • Residents<br>• City of Edmonton | High | Medium |

Table I2 shows high risks pertaining to the condensed Processing options P1 and P2.

Table I2: High Risks for Condensed Processing Options

| Risk | Stakeholder Impacted | P1- Haulers are free to choose their own facilities | P2 - Haulers are required to use the EWMC |
|---|---|---|---|
| | | Score | Score |
| The need to create private processing facilities for organic waste has not been created yet, so there may initially be insufficient processing capacity. | • City of Edmonton<br>• The Strategy Goals<br>• The Environment | Medium | High |
| The City will have an inability to enforce private processing facilities to adhere to regulations set by the City (lack of resources, lack of authority). | • City of Edmonton<br>• The Strategy Goals<br>• The Environment | Extreme | Medium |
| Feedstock limitations, processing inability due to technology, or unwillingness will lead to regional organics processing facilities not meeting the targets outlined by the City of Edmonton. | • City of Edmonton<br>• The Strategy Goals<br>• The Environment | High | Medium |
| Lack of monitoring, enforcement, methodology, or the mixing of waste would lead to inconsistent and obscure data from regional processing facilities, creating an unclear diversion rate. | • City of Edmonton<br>• The Strategy Goals | High | Medium |
| Processing facilities outside of City limits are not bound by municipal rules and bylaws. | • City of Edmonton<br>• The Strategy Goals<br>• The Environment | Extreme | Medium |
| The established bylaws by the City surrounding processing rules are not effective. | • City of Edmonton<br>• The Strategy Goals | Extreme | Low |

Table I3 shows high risks pertaining to the condensed Container Provision options CP1 and CP2.

Table I3: High Risks for Condensed Container Provision Options

| Risk | Stakeholder Impacted | CP1- City provides no containers | CP2 - City provides containers |
|---|---|---|---|
| | | Score | Score |
| In order to maximize asset value, containers will be used past their lifespan. The City will not be able to monitor container conditions. Containers could degrade to the point they are unsafe, unsightly and leak waste into the surrounding area. Containers in this state are less likely to be used correctly and would attract negative attention. | • Properties<br>• Residents<br>• Collectors | High | Low |
| Inconsistent colors and shapes of containers being provided by different haulers. This would make education efforts more difficult and residents would need to re-learn their waste program every time they move. | • Properties<br>• Residents<br>• Educators | High | Negligible |
| Container provider incurs cost for container damage (logistics, customer service, the container repair costs itself) due to damages from unknown sources. The provider would need to pay for the damages regardless of the source of damage. | • City of Edmonton<br>• Container Providers<br>• Residents | High | High |

Table I4 shows high risks pertaining to the condensed Education and Outreach options EO1 and EO2.

Table I4: High Risks for Condensed Education and Outreach Options

| Risk | Stakeholder Impacted | EO1- City provides no education and outreach | EO2 - City provides education and outreach |
|---|---|---|---|
| | | Score | Score |
| If a variety of different haulers are supplying service to buildings, there would be a differing range of education standards. No central source of information, no consistency for communication methods. | • Residents<br>• The Strategy Goals | High | Medium |
| There would not be incentive for properties to receive targeted outreach and properties struggling with specific aspects of the program will not receive the nudge they need to resolve those struggles. | • Residents<br>• The Strategy Goals and Outcomes | High | Medium |
| Mechanisms don't exist for education providers with data to intervene at the property level. | • Residents<br>• The Education Provider<br>• The Strategy Goals and Outcomes | High | Medium |
| No coordinated rollout program, or proper utilization of change management best practices for the communal service could result in inconsistent adoption and/or participation in the program. | • Properties<br>• Residents<br>• The City of Edmonton<br>• Strategy Goals and Outcomes | High | Medium |
| The education provider may not necessarily be the same entity as the collection service provider, resulting in education material that is too generic to be effective. | • The Education Provider<br>• The Service Provider<br>• Residents<br>• The City of Edmonton<br>• Strategy Goals and Outcomes | High | High |

| Risk | Stakeholder Impacted | EO1- City provides no education and outreach | EO2 - City provides education and outreach |
|---|---|---|---|
| | | Score | Score |
| Differing education providers may result in a lack of equity between the curbside and communal service resident experiences, resulting in frustration with the program. | • Residents<br>• The City of Edmonton | High | Medium |

# Communal Collection Diversion Rate Calculation Methodology

## Background

Waste Services offers both collection programs and drop-off services. Waste drop-off services include programs such as Eco Stations and Community Recycling Depots. Waste collection programs can be divided into the curbside collection program (also known as single unit waste collection) and the communal collection program (also known as multi-unit waste collection). The curbside collection program transitioned to a four-stream approach (garbage, recycling, food scraps and yard waste) over the spring and summer of 2021. The communal collection program currently offers two streams of collection (garbage and recycling) and is anticipated to transition to a mandatory three-stream (organics, recycling and garbage) approach starting in 2023 or 2024.

Waste collected through both curbside and communal programs is transported to the Edmonton Waste Management Centre for processing. Processing facilities include a Materials Recovery Facility, an Integrated Processing and Transfer Facility, a Refuse Derived Fuel Facility, an Anaerobic Digestion Facility, a Cure Site and a waste-to-biofuels facility that uses the refuse derived fuel. Waste Services augments its processing capacity through off-site contractors for organic waste. The residual fraction is transported to a remote landfill for disposal.

The goal of diverting 90 per cent of waste from landfill across all sectors was established in 2019 through Edmonton's 25-year Waste Strategy. The 90 per cent target drives Waste Services' planning and program development.

City Council approved the current single unit diversion rate methodology in 2018 (City Operations report CR_5824). This diversion rate has since been reported annually and reflects the performance of the curbside collection program, which serves some multi-unit residences.

## Communal Collection Program Diversion Methodology

This document outlines the approach for calculating the diversion rate for the communal collection program. The calculation methodology is based on the previously approved methodology for the curbside collection program, which in turn is based on the Residential GAP - Manual on Generally Accepted Principles (GAP) for Calculating Municipal Solid Waste System Flow (2003).

Definitions

The following terms are used in the calculation methodology. Definitions are based on definitions in the GAP, with some variations that are consistent with the approved curbside collection methodology.

- Diversion = allowance for grasscycling + allowance for home composting + municipally sponsored reuse + recycling (net of residuals) + municipal organics processing (net of residuals) + refuse derived fuel production
- Disposal = processing residuals that go to landfill
- Generation = total waste diverted + total waste disposed

The notable differences between the definitions used by Waste Services and Residential GAP are:

- Recycling and reuse that happens through the beverage container deposit return system is not included in Waste Services' calculation, as this program is not operated by the City.
- Diversion through refuse derived fuel production is not referenced in the residential GAP definitions, but it is included as diversion in Waste Services' calculation.

**Allocations**

There are two factors that must be accounted for when calculating the communal and curbside collection program diversion rates:

- Some organics and garbage will be collected from communal collection customers using carts; these carts will be serviced by vehicles that also collect organics or garbage from curbside collection customers to increase efficiency.
- Drop-off facilities, such as Eco Stations and Recycling Depots, are used by customers of both the curbside and communal programs. Since facility users are not currently required to indicate their collection service, there is no data available to establish how much of the waste dropped off comes from each customer type. Estimates and assumptions regarding the allocation of diversion from waste prevention and waste drop-off activities will be developed leveraging methodologies defined in the Waste Services Waste Diversion Rate Procedure.

### Diversion Rate Calculation

Waste Services calculates the communal collection program waste diversion rate as follows:

$$\text{\% Communal Collection Program Waste Diverted} = \frac{\text{Tonnes of waste managed by the City from residents receiving communal collection service} - \text{Tonnes of communal collection waste disposed}}{\text{Tonnes of waste managed by the City from residents receiving communal collection service}}$$

### Next Steps

If this methodology is approved, Waste Services will begin reporting the Communal Diversion Rate in 2023.

# CAPITAL PROFILE REPORT

| | | | |
|---|---|---|---|
| PROFILE NAME: | **THREE-STREAM COMMUNAL COLLECTION** | | **RECOMMENDED** |
| PROFILE NUMBER: | **23-81-2054** | PROFILE STAGE: | **Council Review** |
| DEPARTMENT: | **Utilities** | PROFILE TYPE: | **Standalone** |
| LEAD BRANCH: | **Waste Services** | LEAD MANAGER: | **Denis Jubinville** |
| PROGRAM NAME: | | PARTNER MANAGER: | |
| PARTNER: | | ESTIMATED START: | **January, 2023** |
| BUDGET CYCLE: | **2023-2026** | ESTIMATED COMPLETION: | **December, 2043** |

**Service Category:** **Utilities** **Major Initiative:**

| GROWTH | RENEWAL |
|---|---|
| 100 | |

| | |
|---|---|
| **PREVIOUSLY APPROVED:** | **-** |
| **BUDGET REQUEST:** | **29,011** |
| **TOTAL PROFILE BUDGET:** | **29,011** |

**PROFILE DESCRIPTION**

This business case is in response to the June 25, 2021,Utility Committee motion which asked Administration to consider options for fully private services within a regulated utility. The business case describes the process that Administration took to respond to the motion and makes recommendations to keep the communal sector within the existing framework. The business case recommends that the changes recommended in the previous business case be implemented. Those include changes to the current waste collection program offered to residences receiving communal collection. Currently, residences on communal collection (typically condos and apartment buildings) receive garbage and recycle collection via large communal bins, with recycling being voluntary (i.e. not all properties have recycling collection). The changes recommended include mandatory three stream separation of waste for all residences receiving communal collection. The three streams are: garbage, recycling, and organics. The associated capital funds include funding for containers, vehicles and associated accessories.
To accommodate the unique needs and challenges of different properties, the implementation phase is expected to take four years and will include working with every property in Edmonton to ensure challenges such as space restrictions and resident education are taken into consideration when rolling out the program.
Edmonton's 25-year Comprehensive Waste Management Strategy (the Waste Strategy) was approved by City Council in September 2019. The Waste Strategy established a target of 90 percent waste diversion across all sectors, and calls for the implementation of mandatory three-stream source separation of waste as a critical component of making progress towards the target.

Research shows that source separation is most effective at increasing waste diversion when municipalities set clear and consistent rules across all sectors. Consistent expectations for sorting food scraps and recyclable materials at home (regardless of dwelling type), work, school and in the community help to reinforce concepts communicated through educational programs and encourage the formation of responsible waste habits.

Following the implementation of mandatory three-stream separation for residential properties that receive curbside collection (by way of the Edmonton Cart Rollout), this business case addresses the development of a mandatory three-stream source separation service for residential properties that receive communal collection.
In Scope:
- Work with all properties receiving communal collection to transition to mandatory three stream source separation.
- Introduce carts as a collection container in the communal program (currently only bins serviced with front load vehicles are used).
- Introduce volume limits and developer standards for new developments.
- Adjust frequency of collection as required.
- Updates to the Waste Services bylaw.
- Change in processing requirements related to the Edmonton Waste Management Centre.
- Capital and operating budgets to support the program changes.
- Net Present Value (NPV) analysis.
- Revenue Requirement (RR) analysis.
- Development and delivery of education and outreach programs and materials.

Out of Scope:
- All residences include in the Cart Rollout program.
- Non-residential waste programs.
- Waste Management Policy update.
- Securing any additional processing capacity needed to process the source separated waste.

**PROFILE BACKGROUND**

When the June 2021 business case was presented to the Utility Committee, haulers, landlords, and building owners indicated a desire for more private sector involvement in servicing the communal collection program. In response, the Utility Committee passed the following motion:

That the Business Case and cost of service study for Residential Communal Collection be referred back to Administration to provide an alternative business model for consideration, which allows for a fully privately operated service within the regulated utility model along with a robust data sharing and accountability framework to ensure that diversion targets contained within the 25 year waste strategy are met.

This business case evaluates options that could be implemented under the conditions described in the motion.

**PROFILE JUSTIFICATION**

The commitment to achieve 90 percent waste diversion across sectors provides an opportunity to align the communal collection program with best practices for sustainable waste management. Waste Services researched services provided in jurisdictions across North America, Europe and Australia, and engaged local stakeholders to gain insight on how best practices could be applied in Edmonton. The result is the attached business case, which recommends a mandatory three stream source separation program. The three streams are recycling, food scraps and garbage.

Currently, properties that receive communal collection can have waste collected in two streams: garbage and recycling. Containers collected via front load vehicles (referred to as front load bins) are used for both streams in the majority of cases.

It is estimated that approximately ten percent of communal collection waste was diverted from landfill in 2021.This number is representative of a gap that must be addressed to progress toward the target defined by the Waste Strategy.

Based on recent analysis of multiple municipalities, an additional 72 percent of the material that is currently collected as garbage could be diverted through a source separation program (reflecting estimates that 40 percent of garbage is food scraps, and 32 percent is recyclable). Furthermore, Edmonton’s current communal collection recycling stream has a contamination rate of about 22 percent.

Communal waste collection differs from curbside waste collection in many ways including a need for more flexible servicing due to space constraints and anonymity of the users. Compared with properties receiving curbside collection, resident turnover in properties with communal collection has a higher impact to service participation and compliance, as there is a steeper learning curve for adhering to service guidelines when moving between communal collection sites than when moving between homes that receive curbside collection.

The low diversion rate and high contamination rate present an opportunity to design and implement changes to the communal collection program.

**STRATEGIC ALIGNMENT**

Mandatory source separation of waste is aligned with, and critical to support, the City of Edmonton’s strategic goals as outlined in the original business case presented with the June 25, 2021, City Operations report CO00581.

Implementing mandatory source separation of waste for properties receiving communal collection through private services is less aligned with the goal of Climate Resilience than the same services offered through the Waste Utility, based on the compromised environmental outcomes privatization is expected to achieve.

**ALTERNATIVES CONSIDERED**

The options analysis used a two-stage approach. In the first stage, the detailed options were evaluated against a wide range of criteria. In the second stage, the condensed options were evaluated in terms of their risk and cost.

Alternatives considered are:
1. Full privatization
2. Privatization with City Processing
3. Privatization with City Education
4. Private Collection and Containers
5. City Managed Services (Status Quo)

Options were evaluated by a group of subject matter experts within Waste Services in a series of workshops.

As described in Section 5.4, and in support of the options analysis, Waste Services requested information from private haulers & waste processors about their current capacity and future plans. The information collected was used to inform the options analysis as much as possible. However, Administration’s ability to quantitatively evaluate options involving privatization was limited due to the lack of information about private sector operators.

**COST BENEFITS**

Based on limited available information about potential costs for privatized services, only the Capital and Operating savings and costs for the alternatives were evaluated, including stranded costs that would need to be managed with privatization. Please refer to the "Costs" section of the business case for cost benefit analysis. Further details are provided in the business case appendices.

**KEY RISKS & MITIGATING STRATEGY**

A comprehensive risk register was developed to assess the risks for each viable alternative. Through analysis of risk categories relating to Collection, Processing, Container Provision, Education and Outreach, alternative 5 for City Managed Services (Status Quo) demonstrated the lowest risk. Alternative 5 avoids risks related to:
- Achieving the waste reduction and diversion targets of the Waste Strategy;
- The City’s inability to effectively or affordably regulate rates, rate increases, service outcomes, and waste processing and disposal under the current limitations of the MGA; &
- Inequitable service outcomes for some multi-unit properties and residents.
Please refer to the ""Risks"" section of the attached business case. Further details are provided in the business case appendices.

**RESOURCES**

The recommended alternative requires 30 Permanent and Seasonal FTE's and 14 Temporary FTE's for the program implementation. Please refer to the "Staff and Fleet Impacts" section of the attached business case.

**CONCLUSIONS AND RECOMMENDATIONS**

The recommended alternative is for mandatory colocation with voluntary chute closure within the current structure of City offered services through its own personnel and its contractors. Through risk and financial analysis, the City managed services option has the highest total score, presenting the lowest risk and has an acceptable NPV. The City's current service model, which includes significant private sector participation through competitively awarded service contracts, is a strong base upon which to introduce more flexible servicing options in collaboration with the private sector, as doing so becomes feasible.

# CAPITAL PROFILE REPORT

PROFILE NAME: **Three-stream Communal Collection** **RECOMMENDED**

PROFILE NUMBER: **23-81-2054** PROFILE TYPE: **Standalone**

BRANCH: **Waste Services**

## CAPITAL BUDGET AND FUNDING SOURCES (000's)

| | | Prior Years | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Beyond 2029 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| APPROVED BUDGET | Approved Budget | | | | | | | | | | | | |
| | Original Budget Approved | - | - | - | - | - | - | - | - | - | - | - | - |
| | Current Approved Budget | - | - | - | - | - | - | - | - | - | - | - | - |
| BUDGET REQUEST | Budget Request | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |
| | Revised Funding Sources (if approved) | | | | | | | | | | | | |
| | Self-Liquidating Debentures | - | - | - | - | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 21,688 |
| | Waste Mgt Retained Earnings | - | - | - | 7,323 | - | - | - | - | - | - | - | 7,323 |
| | Requested Funding Source | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |
| REVISED BUDGET (IF APPROVED) | Revised Budget (if Approved) | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |
| | Requested Funding Source | | | | | | | | | | | | |
| | Self-Liquidating Debentures | - | - | - | - | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 21,688 |
| | Waste Mgt Retained Earnings | - | - | - | 7,323 | - | - | - | - | - | - | - | 7,323 |
| | Requested Funding Source | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |

## CAPITAL BUDGET BY ACTIVITY TYPE (000's)

| | Activity Type | Prior Years | 2021 | 2022 | 2023 | 2024 | 2025 | 2026 | 2027 | 2028 | 2029 | Beyond 2029 | Total |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REVISED BUDGET (IF APPROVED) | Other Costs | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |
| | Total | - | - | - | 7,323 | 1,525 | 1,548 | - | - | 101 | 88 | 18,426 | 29,011 |

## OPERATING IMPACT OF CAPITAL

Type of Impact:

| Branch: | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE | Rev | Exp | Net | FTE |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **Total Operating Impact** | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |

COUNCIL REPORT

# EPCOR WATER SERVICES INC. - 2022 WATER, WASTEWATER AND DRAINAGE SERVICES OPERATIONAL PLAN

## RECOMMENDATION

That the March 25, 2022, Financial and Corporate Services report FCS01063, be received for information.

### Report Purpose

**Information only.**

This report informs Utility Committee of the operational initiatives planned for the 2022 calendar year for the Water Services and Drainage Services business units of EPCOR Water Services Inc.

### Executive Summary

- This report provides the 2022 Annual Operational Plan for EPCOR Water Services Inc. (EWSI) outlining the major initiatives planned for the Water Services and Drainage Services business units.
- The major initiatives identified in the 2022 Operational Plan are consistent with the programs and initiatives included in the Performance Based Rates applications approved by City Council for Water Services for the 5 year period April 1, 2022, to March 31, 2027, and for Drainage and Wastewater Treatment Services for the three year period April 1, 2022, to March 31, 2025.

## REPORT

EWSI presents an Annual Operational Plan to Utility Committee in the first quarter of each year as part of the ongoing monitoring and reporting of the water, wastewater treatment, and drainage services provided by EPCOR Water Services Inc. (EWSI) under performance based regulation. The 2022 Operational Plan is provided in Attachment 1 and includes an overview of the various operational initiatives planned by EWSI for the 2022 calendar year for the Water Services (includes water treatment, distribution and transmission, and wastewater treatment) and Drainage Services business units.

EWSI has presented the 2022 initiatives for both the Water Services and Drainage Services business units within the following six specific strategic areas of focus: Customer Service, Public

Health/Environment, Employee and Public Safety, Employee Development, Operational Performance and Growth and Financial Performance.

The major initiatives identified in the 2022 Operational Plan are consistent with the programs and initiatives included in the Performance Based Rates applications approved by City Council for Water Services for the 5 year period April 1, 2022, to March 31, 2027, and for Drainage and Wastewater Treatment Services for the three year period April 1, 2022, to March 31, 2025.

Major initiatives common to both Water Services and Drainage Services, as discussed on pages 6 to 18 of Attachment 1, include:

- continue to enhance and implement the Climate Change Adaptation/River Flooding resiliency plan, which identifies key risks due to climate change for Edmonton's water treatment plants, water transmission and distribution systems and the Gold Bar Wastewater Treatment Plan;
- implement the GHG reduction plan, in which EWSI is moving towards utilizing 100 percent of its electricity consumption within Edmonton from a portfolio of renewable sources including through the development of the E.L. Smith Solar Project and the signing of an agreement to procure wind energy from a new wind farm in southern Alberta; and
- implement the Integrated Watershed Management Strategy for Edmonton to manage total loadings to the North Saskatchewan River from all EPCOR discharges and to ensure drinking water security and source water protection for the Edmonton water supply in one unified watershed management program.

Major initiatives specific to Water Services, as discussed on pages 19 to 27 of Attachment 1, include:

- execute the Lead Mitigation Strategy (presented to Utility Committee on March 26, 2019, in Financial and Corporate Services report CR_6903, EPCOR - Lead Mitigation Strategy Business Case) to reduce the amount of lead in the drinking water in Edmonton to conform to new Health Canada guidelines;
- complete the E.L. Smith Solar Project and Smart Grid System (presented to Utility Committee on May 10, 2019, in Financial and Corporate Services report CR_7055, EPCOR Water Services Inc. - E.L. Smith Solar Project - Update); and
- optimize the meter reading function through the introduction of Advance Metering Infrastructure, with the completion of planning in 2022 and installation of meters beginning in 2023.

Major initiatives specific to Drainage Services, as discussed on pages 28 to 37 of Attachment 1, include:

- execute the Corrosion and Odor Mitigation Strategy (presented to Utility Committee on November 1, 2019, in Financial and Corporate Services report CR_7559 EPCOR Water Services Inc. - Non-Routine Adjustment to Drainage Utility Rates for Corrosion and Odour Reduction Strategy) to help reduce the number of odor issues and complaints

related to the sanitary and combined sewer network in Edmonton and to lengthen the life of sewer network assets; and
- execute the Stormwater Integrated Resource Plan (presented to Utility Committee on November 1, 2019, in Financial and Corporate Services report CR_7558 EPCOR Water Services Inc. - Non-Routine Adjustment for Stormwater Integrated Resource Plan), a $1.6 billion system wide integrated approach implemented over the next 20-30 years to help mitigate the flood risk in Edmonton.

## COMMUNITY INSIGHT

EWSI has engaged the general public during the development of a number of its initiatives, including the review and approval of the most recent EWSI Performance Based Rates applications to set new utility rates for Water, Wastewater Treatment and Drainage Services effective April 1, 2022, and during the development of the Corrosion and Odor Reduction Strategy.

EWSI's public engagement initiatives planned in 2022 include;

- improving communication with the City of Edmonton and groups such as the Urban Development Institute and the Infill Development in Edmonton Association;
- fostering relationships with Indigenous neighbors including the Enoch Cree Nation and Metis Association of Alberta;
- educating the public on safety matters, such as the dangers related to accessing stormwater ponds for recreational purposes; and
- engaging stakeholders in respect of a possible revision to the stormwater rate structure to take into account recent changes to deal with flooding and changing home lot sizes.

## GBA+

GBA+ specific to this report was not conducted, as the information provided is from EWSI regarding its planned 2022 initiatives for its Water and Drainage Services business units.

## ATTACHMENTS

1. EPCOR Water and Drainage Services - 2022 Annual Operational Plan

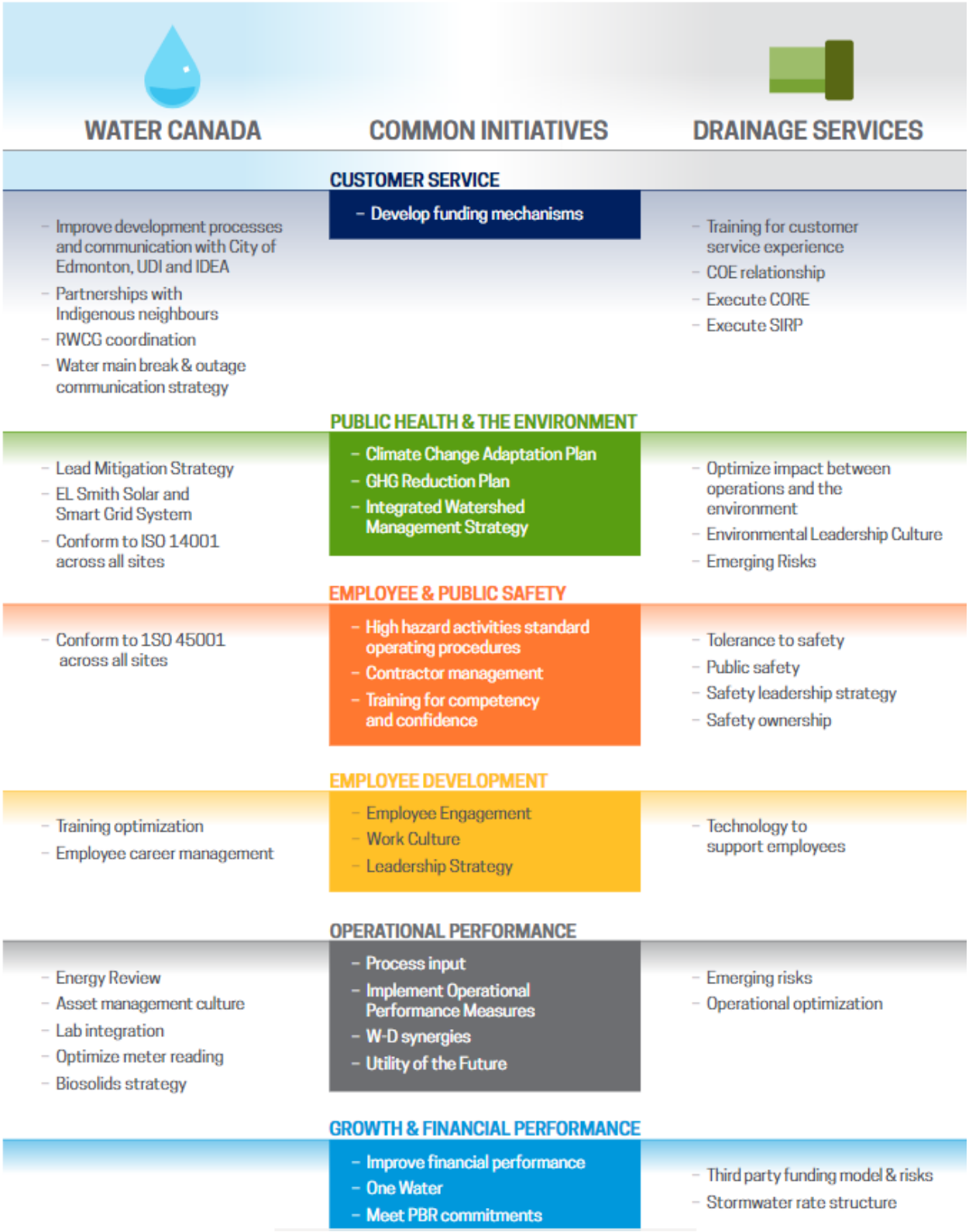
# EPCOR

# WATER & DRAINAGE SERVICES

# 2022 ANNUAL OPERATIONAL PLAN

**Table of Contents**

# OVERVIEW


WATER CANADA
COMMON INITIATIVES
DRAINAGE SERVICES
CUSTOMER SERVICE
– Develop funding mechanisms
– Improve development processes and communication with City of Edmonton, UDI and IDEA
– Partnerships with Indigenous neighbours
– RWCG coordination
– Water main break & outage communication strategy
– Training for customer service experience
– COE relationship
– Execute CORE
– Execute SIRP
PUBLIC HEALTH & THE ENVIRONMENT
– Climate Change Adaptation Plan
– GHG Reduction Plan
– Integrated Watershed Management Strategy
– Lead Mitigation Strategy
– EL Smith Solar and Smart Grid System
– Conform to ISO 14001 across all sites
– Optimize impact between operations and the environment
– Environmental Leadership Culture
– Emerging Risks
EMPLOYEE & PUBLIC SAFETY
– High hazard activities standard operating procedures
– Contractor management
– Training for competency and confidence
– Conform to 1SO 45001 across all sites
– Tolerance to safety
– Public safety
– Safety leadership strategy
– Safety ownership
EMPLOYEE DEVELOPMENT
– Employee Engagement
– Work Culture
– Leadership Strategy
– Training optimization
– Employee career management
– Technology to support employees
OPERATIONAL PERFORMANCE
– Process input
– Implement Operational Performance Measures
– W-D synergies
– Utility of the Future
– Energy Review
– Asset management culture
– Lab integration
– Optimize meter reading
– Biosolids strategy
– Emerging risks
– Operational optimization
GROWTH & FINANCIAL PERFORMANCE
– Improve financial performance
– One Water
– Meet PBR commitments
– Third party funding model & risks
– Stormwater rate structure

# INTRODUCTION

This document presents the 2022 Operational Plan for the Water Treatment, Distribution and Transmission, and Wastewater Treatment (collectively referred to as "Water Services") and the Drainage Services business units of EPCOR Water Services Inc. (EWSI). The purpose of this document is to provide Edmonton City Council, Utility Committee and stakeholders an overview of the various operational initiatives planned for the 2022 calendar year for both business units.

The overarching goal of Water Services is to provide customers with safe and reliable water and wastewater services while meeting or exceeding all environmental requirements, delivering value and achieving a fair return. This goal will be accomplished by a team of safe and accountable employees who are engaged in the operation of EPCOR Water Services.

Drainage Services' overarching goal is to provide safe and reliable stormwater and wastewater collection services to customers within the City of Edmonton. Drainage Services' vision is to be an industry leader valued by our customers and shareholder as environmental stewards who keep the public safe and the river healthy. This will be accomplished through effectively planning business requirements, focusing on excellence in engineering, managing our capital projects well, and pursuing proactive operational practices informed by a rigorous stakeholder engagement process.

While Water Services and Drainage Services are separate businesses units within EWSI, a significant number of initiatives are common to both. These initiatives are intended to drive synergies, gain efficiencies and to align the businesses operationally. As in prior years, this report is structured in three major sections: 1) Common Initiatives that are being pursued by Water Services and Drainage Services together, 2) Water Services' specific initiatives and 3) Drainage Services' specific initiatives.

Many of the initiatives are extensive in scope and cover a number of years and as a result may have been discussed in previous reports (and will likely be discussed in future reports). Further, the impact of the COVID pandemic delayed the original timelines for some initiatives.

All initiatives are presented within a common strategic framework comprised on six focus areas:

- Customer Service – we aim to serve customers better over time
- Public Health and the Environment – we aim to ensure all public health and environmental standards are met or exceeded
- Employee and Public Safety – we make safety a priority in all things we do
- Employee Development – we aim to develop a knowledgeable, capable and engaged team

- Operational Performance – we strive for excellence in the delivery of our services to ensure value for the customer
- Growth and Financial Performance – we aim to ensure the company maintains its level of profitability, and seizes business opportunities to grow

# PART ONE: WATER AND DRAINAGE SERVICES – COMMON INITIATIVES

## 1 OVERVIEW

2022 initiatives common to both Water and Drainage Services are summarized below.

### 1.1 Customer Service

- Review developer funding mechanisms in order to align approaches across all business units.

### 1.2 Public Health and the Environment

- Enhance and implement the Climate Change Adaptation/River Flooding resiliency plan.
- Implement the GHG reduction plan.
- Implement the Integrated Watershed Management strategy for Edmonton.

### 1.3 Employee and Public Safety

- Develop and implement company-wide standard operating procedures for all high-hazard activities.
- Implement contractor management and incident response procedures.
- Train employees for competency and confidence.

### 1.4 Employee Development

- Improve employee engagement and build a respectful, inclusive, diverse, collaborative and safe work culture.
- Develop and implement leadership strategy.

### 1.5 Operational Performance

- Implement a standardized process improvement methodology supported by external benchmarks.
- Continue to implement the Organizational Project Management Office initiative.
- Develop and implement strategies for realizing synergies between Water Canada and Drainage Services.
- Continue to implement One Water.
- Advance the “Utility of the Future” initiative.

### 1.6 Growth and Financial Performance

- Continue to implement One Water.
- Deliver results in line with the approved PBR and prepare for the next PBR application.

# 2 CUSTOMER SERVICE

## 2.1 Review developer funding mechanisms to align approaches across business units

Capital investments required to support new development across the city are allocated between developers and ratepayers differently across EPCOR's various lines of business. For **water** infrastructure, costs are generally shared between developers and ratepayers with ratepayers paying for "backbone" assets such as treatment and transmission infrastructure as well as reservoirs. Developers are responsible for distribution level infrastructure that is generally added to real estate lot prices. For **drainage** assets, developers cover the majority of costs for new infrastructure. Conversely, ratepayers cover the majority of costs for **electricity** infrastructure.

EWSI is working with developers to understand the historic rationale for these differences as well as the challenges that any disparity in approaches causes. From that basis, guiding principles are being developed to ensure a consistent framework for allocating costs of new development between developers and ratepayers. Specifically, EWSI is drafting a white paper to establish cost minimization, cost allocation and regulatory principles to be applied in its approach to funding water and drainage infrastructure required to support growth. The common municipal goal of "growth pays for growth" must be balanced against the principle, commonly applied in utility settings, that utility rates must be non-discriminatory.

# 3 PUBLIC HEALTH AND THE ENVIRONMENT

## 3.1 Enhance the Climate Change/River Flooding resiliency plan to include drought, water quality, and freeze/thaw cycles.

In 2018, Water Services developed a Climate Change Adaptation action plan that identified 15 key risks for the Edmonton water treatment plants (WTP), water transmission and distribution systems and the Gold Bar Wastewater Treatment Plant (WWTP) that will be significantly affected by climate change. Initial risk mitigation strategies and specific actions were developed for each of these risks. River flooding was identified as the greatest of the sudden onset risks for the Edmonton facilities. Severe river flooding has the potential to impact both the Rossdale and E.L. Smith WTPs, causing damage to critical components and potentially disrupting production of treated drinking water to 1.3 million people Edmonton and the Capital Region. The Gold Bar WWTP would also be impacted by river flooding, potentially resulting in a significant environmental release.

Consequently, River Flood Resiliency Plans have been developed for the Edmonton WTPs and the Gold Bar WWTP, aimed at aligning with provincial recommendations of critical infrastructure protection for a 1:500 year return period event. These plans include the Edmonton WTP Flood

Protection capital program that involves critical asset protection or relocation, installation of backflow prevention devices, and construction of landscaped embankments that will take place over three phases between 2021 and 2027.

All of the risks associated with climate change on the Edmonton water and wastewater system operations are reviewed on an annual basis to determine the appropriate risk ranking. Additional climate related risks to be considered include: low water flow and availability in the river (water scarcity); localized drought; significant changes to water quality; major wildfire in the river basin that impacts water quality; changing ecology of the river with increased temperature; and the risk of increased main breaks, especially transmission main breaks, due to more freeze/thaw cycles.

So far, the Climate Change Adaptation Plan has been maintained as an internal Water Services document. An objective for 2022 is to produce an outward looking document that can be shared with key stakeholders such as the City of Edmonton Council and Administration, Alberta Environment and Parks, and others who are interested in the Climate Change Adaption Plan. It will be critical to ensure that the risks and the plans align with the City of Edmonton Climate Change Adaptation Plan that was finalized in 2018 and with EPCOR's overall Climate Change strategy and Environmental and Social Government reporting initiative.

## 3.2 Implement the GHG reduction plan

Environmental stewardship is at the core of EPCOR's purpose. Serving a number of communities beyond Edmonton in Canada and the United States, we are in a position to demonstrate climate leadership at the international scale. As such, our climate mitigation and adaptation strategies and goals are driven from our corporate aspirations.

EPCOR was a founding member of the Corporate Climate Leaders Program. This City-led program supports and empowers corporate members to make decarbonization commitments[1]. In 2021, EPCOR announced that it was expanding its commitments to all of its locations. Specifically, EPCOR commits to company-wide net GHG reductions of 50% in 2025, 85% in 2035 and 100% (net-zero) by 2050[2].

The largest source of greenhouse gas emissions within EWSI is from the consumption of electricity which is used in both water and wastewater treatment operations as well as in pumping water to final consumers. EWSI currently buys electricity sourced from the Alberta grid through competitive procurement. As part of EPCOR's commitment to reducing its environmental footprint, the company is moving towards utilizing 100% of its electricity

[1] https://www.edmonton.ca/programs_services/environmental/corporate-climate-leaders
[2] https://www.epcor.com/about/news-announcements/Pages/epcor-releases-esg-report-2020.aspx

consumption within Edmonton from a portfolio of renewable sources. The portfolio approach aligns with the City of Edmonton's Community Energy Transition Strategy, which sets targets for sourcing renewable electricity from new local sources, and for reducing Edmonton's overall greenhouse gas footprint.

This approach is being implemented through two projects:

i) Development of new, local renewable generation through the E.L. Smith Solar Project;

ii) Wind energy procurement - EPCOR Utilities Inc. has signed an agreement with Renewable Energy Systems Canada to develop and construct the Hilda wind farm in southern Alberta. EPCOR will acquire Renewable Electricity Certificates from the project for a 20 year term. The combination of this offtake agreement and the E.L. Smith Solar Farm will result in EPCOR Water utilizing 100% green electricity for all its operations within the City of Edmonton. Renewable Energy Systems Canada has obtained Alberta Utilities Commission (AUC) approval for the Hilda wind farm with rezoning activities underway. The Hilda wind farm is expected to be constructed in fall/winter 2022 with commercial operations commencing in Q1 2023.

## 3.3 Implement the Integrated Watershed Management Strategy for Edmonton.

The intent of the Integrated Watershed Management Strategy is to manage total loadings to the North Saskatchewan River from all EPCOR discharges in Edmonton and to ensure drinking water security and source water protection for the Edmonton water supply in one unified watershed management program.

| Key Objectives of the IWMS |
|---|
| Alignment, optimization and enhancement of monitoring the North Saskatchewan River and its tributaries in Edmonton |
| Alignment of regulatory reporting |
| Alignment and prioritization of research, education and awareness partnership funding |
| Coordination of emergency response for spills/unauthorized releases to the North Saskatchewan River |

| Related ConnectEdmonton Goals |
|---|
| Ensure the safety and security of Edmonton's water supply, food systems and natural ecosystems to support long term resilience to flooding, droughts and extreme weather events |
| Manage storm water runoff and improve water quality by ensuring a high standard of design at the area, neighbourhood and site level |
| Improve community flood resilience through ongoing risk management, infrastructure planning and operation, financial analysis and stakeholder engagement |
| Manage and protect the watershed and water supply to maintain the quality of Edmonton's drinking water supply |

| Pillars of the Integrated Watershed Management Program |
|---|
| Implementation of the **SIRP Slow programs** to enhance source control to deter the release of sediment to Edmonton's storm system from urban development and/or construction. This is achieved through construction of widespread low impact development and dry ponds throughout the urban watershed with the dual purpose of improving stormwater runoff quality and for volume control. This includes additional activities aimed increasing awareness, monitoring and, if necessary, punitive corrective action. ; |
| Leveraging the Edmonton Metropolitan Region Board and partnership with the North Saskatchewan Watershed Alliance to facilitate discussion with **regional municipalities, counties, and First Nations** on regional watershed issues that impact Edmonton, such as urban creek erosion. Influence these interested parties to implement best management practice, design and construction standards to reduce storm water impacts on Edmonton's urban tributaries; |
| Adoption of the One Water approach for communications on the state of the Edmonton Watershed, including, revamping the **River for Life strategy document**, revisiting the strategy's expected outcomes and key performance indicators and consolidating source water protection plans, climate adaptation plans, and WTP residuals management objectives into an overall Strategy document for Edmonton; and |
| Initiation of high level discussion with Alberta Environment and Parks on integrated watershed management and total loadings planning and start setting the strategic objectives and upfront requirements for the **2025 renewal of the Edmonton wastewater system approval**. |

In 2022, key focus will be on continued implementation of the strategy, including:

- develop a Regional Watershed Modelling Strategy with external partners;
- implement a residuals monitoring program for the Edmonton Water Treatment Plants;
- continue implementation of Low Impact Development and overall SIRP SLOW projects and identify opportunities for small scale monitoring for volume reduction and water quality improvements; and
- develop a stormwater characterization program in coordination with Alberta Environment and Parks.

# 4 EMPLOYEE AND PUBLIC SAFETY

## 4.1 Develop and implement company-wide standard operating procedures for all high-hazard activities.

EWSI will develop and implement company-wide assessments for six of the lifesaving rules as well as chemicals to review existing procedures to ensure conformance to the EPCOR Standards and provincial legislative requirements. The six lifesaving rules reviews will include Confined

Space, Work from Heights, Hazardous Energy Isolation, Lift Plans/Suspended Loads, Limits of Approach, Ground Disturbance and the addition of Chemicals.

Reviewing EWSI's existing standard operating procedures across Operations has significant benefits as it ensures hazards have been identified, controls have been implemented and reduces the organizational risk exposure for the Operational areas.

### 4.2 Implement contractor management tools to effectively oversee our contractor partners.

Having continuous improvement initiatives for contractor management processes enable our project teams to effectively oversee the contractors and work activities being performed. Establishing a compliance tracking tool and project evaluation processes empowers operations to effectively oversee our contractor partners in their completion of critical tasks.

### 4.3 Train employees for competency and confidence.

Ensuring employees have the knowledge, skills and competence to perform their job safely. Through appropriate training, skill development and on-the-job experience, Drainage Services will ensure employees have the knowledge, skills and competence to perform their job safely. We will do this by applying the appropriate level of training relative to the risk and complexity of the task. The plan is to ensure compliance and conformance training is maintained.

In order to achieve this, EWSI will:

- develop and implement company-wide competency based assessments for high hazard activities;
- support the development of training to ensure front line leaders understand our business, are effective at managing people issues, and create safe work environments;
- bring training outside the classroom by providing onsite training specific to the work of the employee.

## 5 EMPLOYEE DEVELOPMENT

### 5.1 Improve employee engagement and build a respectful, inclusive, diverse, equitable, collaborative and safe work culture.

This strategic initiative is comprised of efforts to develop both employee engagement and equity, diversity and inclusion at EPCOR.

i. Employee Engagement

The employee engagement survey is one of the primary ways EPCOR solicits feedback from employees to determine where we can improve and where we need to focus our efforts on our quest to ensure EPCOR is a great place to work. The Human Resources team will deliver the engagement survey in 2023 and work with leaders across our Business Units to review and interpret the survey results and implement action plans. Action plans will address the top key drivers and opportunities identified in the engagement survey results.

ii. Employee Diversity, Equity and Inclusion (DEI)

Great places to work are where people feel respected, valued and part of a team. Not only is it important to our employees, it's seen as critically important to EPCOR's leadership team and Board of Directors. In 2018 a Diversity Council was formed and their first task was to create an Equity, Diversity & Inclusion Framework, to guide our approach to this important area. In 2019, the Council, in concert with leaders across our Business Units, pursued a variety of activities and initiatives to drive this focus such as increasing awareness of diversity and inclusion at EPCOR and supporting employee resource groups (e.g. HerStory). In 2022, the focus will be to continue to drive towards an inclusive work culture and to identify and address areas where systemic bias has created barriers to inclusion and equal opportunity. EPCOR has established a number of working groups comprised of leaders across the business, supported by HR, to establish actions to support leaders, increase awareness and to imbed DEI plans within key processes and business plans.

## 5.2 Advance Leadership Strategy

Leaders must be extremely effective at building high performing teams that support employees to increase capability, collaboration, competency and knowledge. Ensuring employee and leadership behaviours align to EPCOR's behavioural and leadership competencies is paramount to providing a pipeline of high potential employees to support leadership succession and growth.

Employees will be supported by a series of activities, including completing core competency leadership training and knowledge transfer.

The knowledge base will be supported by identifying and providing knowledge transfer needs for succession and retirement planning, along with documenting practices for knowledge transfer.

Job rotation and succession planning will play an active role in this development. The Human Resources team will engage with business leaders and provide tools to assist with identifying suitable candidates for job-to-job or project-to-project opportunities.

# 6 OPERATIONAL PERFORMANCE

## 6.1 Implement a standardized process improvement methodology supported by external benchmarks.

In order to decrease costs, maintain reasonable rate increases and offset the impact of the PBR efficiency factor, it is necessary to ensure that EWSI maintains and increases productivity over time. The vision of this initiative is to develop a standardized process or continuous improvement program to support productivity increases and service quality improvements across all of Water and Drainage. The program would encompass methods, techniques and tools and be used to design, control and analyze both business and operational processes.

This initiative is seen as an extension of, and building upon, the innovation strategy developed over the past several years and is directed towards building a "tool kit" for all to use, rather than a specific department focused on process improvement. The long-term objective of this strategy will be to become an organization where process improvements occur systematically and in a sustainable manner.

## 6.2 Continue to implement the organizational project management initiative across all sites.

In order to improve the efficiency and effectiveness of our capital project management, EWSI is standardizing the way project managers across Water and Drainage plan, execute and monitor key aspects of their projects and programs. This initiative involves creation of one Project Management Methodology along with several processes, tools and templates. In addition to the creation of an overarching Project Management Standard, over the longer term, we will undergo a review and re-development of processes, procedures, templates, tools and systems which are currently in use to ensure the use of best practices and consistency for all users.

This initiative will be completed in conjunction with similar Project Management initiatives taking place across the rest of EPCOR. The benefits of this initiative include consistency and higher engagement, as well as potential cost savings through better project execution.

## 6.3 Develop and implement strategies for realizing synergies between Water Services and Drainage Services.

Since the transfer of Drainage to EPCOR, a focus has been on identifying, developing and implementing synergies to realize operating and capital efficiencies in both business units.

The focus for 2022 will be in pursuing synergies in the following areas:

- Growth and Development Planning
- Control and Dispatch (Tier 2 Trouble Customer Services)

- Fleet Dispatch and Fleet Coordination
- Inspections Related to Construction Activities
- Drafting and Design
- Project Management and Engineering
- Certified Safety Equipment
- Shops
- Site Restoration
- Pre-job Set Up
- System Monitoring
- On-premise Inspections
- Above Ground and Preventative Maintenance

### 6.4 Advance the "Utility of the Future" initiative.

The Utility of the Future is an ambitious path to modernize operations and reduce long term operating and capital costs by leveraging technology and processes used and refined by leading water utilities around the world. This Corporate initiative will provide a roadmap and framework identifying potential opportunities to implement emerging technology solutions and processes in the existing utilities operated by EPCOR, and the prioritization of those opportunities based on the highest potential return on investment. This will take a 10-year view of technology trends and O&M practices in the water and related industries and the current digital and operational maturity of EPCOR in relation to leading utilities. The review is focused on six key areas of potential optimization: Asset Optimization; Customer Engagement; Sustainability; Procurement, Partnerships and Supply Management; Advance Notification of Events; and Rate Pressure.

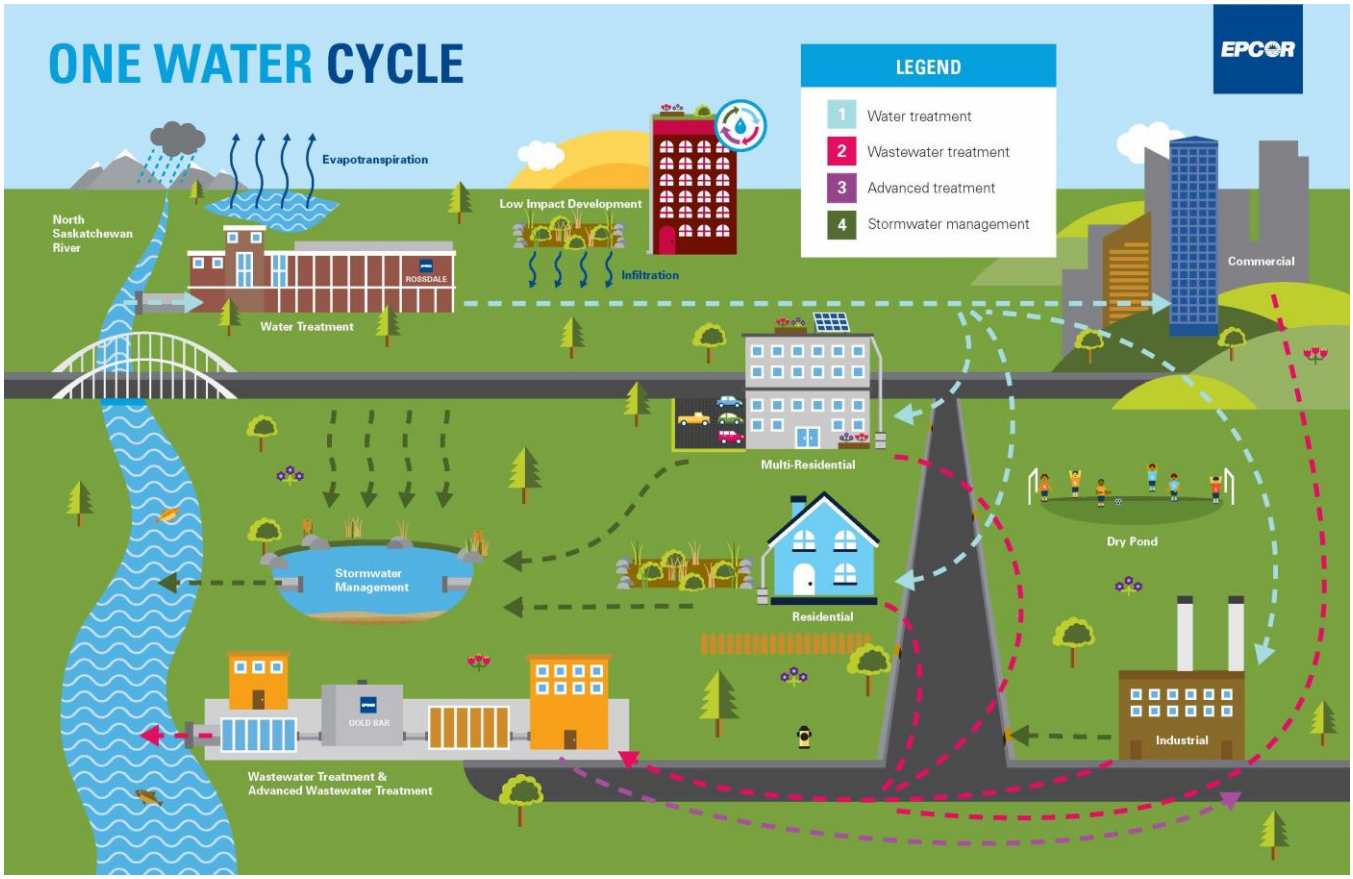
In 2022, the focus will be on two initiatives – "Advanced Notification of Events" – which we are calling situational awareness, and "Partnerships and Supply Management.

## 7 GROWTH AND FINANCIAL PERFORMANCE

### 7.1 One water – Continue the alignment of the integrated resource planning activities between the water and drainage utilities.

Water and Wastewater utilities around the world are enhancing their strategic planning by moving to a "One Water" approach to managing the entire Water cycle in their community. The One Water approach has been defined as a holistic approach to sustainable water management

that breaks down the traditional silos within the water utility sector and encourages collaboration between water utilities and other sectors.




With the integration of Drainage Services, EPCOR has taken the opportunity to leverage the One Water techniques to enhance the integrated resource plans that are in place in the different business units within EWSI. In addition, the recent approval of the City of Edmonton City Plan, the Edmonton Regional Municipal Board long range development plans, and the active Climate Change Adaptation initiatives, also support the movement towards a holistic integration of these strategies.

In 2021 and moving into 2022 the following areas will be a focus from a One Water Planning perspective.

i) **Consumption Patterns** – In 2021, the One Water Planning team completed the review of water consumption and sewer generation trends within the Edmonton region. This analysis has resulted in recommendation to lower the design assumptions across all

customer categories to reflect the success of water conservation in the region used for both greenfield and infill develop reducing the overall capital requirements to support growth. Consultations with the development community are underway to update the City Design and Construction Standards and assess the impact for developments in progress to take advantage of the new design assumptions.

ii) **Situational Awareness** – In 2021, the One Water Planning team led the implementation of the situational awareness dashboards for both the Water and Drainage operations. This dashboard integrates the monitoring systems across the utility with the GIS mapping tools available and external weather tracking systems to provide enhanced real time awareness for both the Drainage and Water operational and planning teams. The Stormwater Integrated Resource Plan (SIRP) and Corrosion and Odour Mitigation (CORe) Strategy program monitoring is also supported by this new tool. As EPCOR continues to explore the Utility of the Future (described previously) these tools are expected to continue to evolve.

iii) **SanIRP/ SSSF/ Future Wastewater Plants Expansions –** The Sanitary IRP (SanIRP) is currently in development within the One Water Planning team and is expected to have the first consolidated report available by the end of 2022. The SanIRP development is leveraging the consumption analysis mentioned above as well as the Inflow/Infiltration strategies prioritized in SIRP to reassess the large trunk network requirements considering CORe objectives and alignment with the City plan for growth in the region. The team is also working closely with the City of Edmonton and Urban Development Institute (UDI) Sanitary Servicing Strategy Fund (SSSF) committees as the movement to an IRP approach will impact the size and timing for the trunk segments funded through the SSSF development fees.

iv) **Growth Strategies for City and Region** – Plan Edmonton is targeting an additional 1 million population by 2065 with 1/3 to be through infill development. One Water Planning, in conjunction with Water (Distribution and Transmission) D&T and EPCOR Distribution &. Transmission Inc. (EDTI), has been collaborating with the City of Edmonton planning groups as they implement City Plan, update their infill strategies and update the zoning bylaws of the City. In 2021, the EPCOR groups participated in the priority nodes and corridors infrastructure needs assessments and the district planning pilot area assessments. Through this analysis the a number of infrastructure upgrades including new water and sewer pipes, new hydrants and opportunities for green

infrastructure and additional water conservation were identified to reduce overall costs to support the City Plan. EPCOR continues to work with City Planning to assess opportunities for targeted investments in the priority nodes and corridors. EPCOR is also supporting the region through analysis of the impacts on the Edmonton water system to support the Bremner growth node in County of Strathcona.

## 7.2 Deliver in line with the approved PBR

Water Services and Drainage Services are regulated by the City of Edmonton through a form of Performance Based Regulation (PBR).

The 2022-2024 PBR Applications for Drainage and Gold Bar, and the 2022-2026 PBR Application for Water were approved by Edmonton City Council on August 30, 2021. The approved rate and bylaw changes will come into effect April 1, 2022. The initiatives laid out in the 2022 Annual Plan align to or support the commitments laid out in those applications. These include infrastructure investment to ensure a robust, safe and reliable system, preparing for population growth within the city of Edmonton and achieving approved performance metrics.

After the approval of the PBR applications and associated bylaws, EWSI has the obligation to provide on-going reporting to City Council and the Utility Committee to facilitate their role as regulatory and to ensure that Utility Committee can exercise oversight of the execution of plans and projects defined within the PBR applications. In early February 2022, EWSI proposed a reporting framework and timeframe which would form the basis of future Utility Committee reporting for all EWSI entities. By establishing a standardized approach and timeframe, the form, adequacy and frequency of reporting could be confirmed.

The reporting framework, and the level of reporting provided, is intended to ensure transparency to operational and financial performance. Moreover, a formalized, structured approach has proven to facilitate a consistent and timely provision of information to allow all stakeholders to be aware of when specific information will be presented and discussed. The Reporting Framework is summarized as follows:

| Report | Focus | Timeframe |
|---|---|---|
| **PBR Application** | • Provides the basis upon which Council approves rates and terms of service<br>• Provides the baseline for all other reporting during the term | • Water Services (2022-2026)<br>• Wastewater Treatment (2022-2024)<br>• Drainage Services (2022-2024) |
| **PBR Progress Report** | • Detailed update of financial performance capital projects, metrics and operational initiatives | • 1 year – calendar year<br>• Presented mid-year for the previous year |
| **Utility Committee Motions** | • EWSI's formal response to Utility Committee motions | • Based on EWSI operational requirements or as directed by Utility Committee |
| **Annual Operational Plan** | • Overview of the significant operational initiatives and activities planned for the year | • 1 year – calendar year<br>• Presented in February (March in 2022) |
| **PBR Application – Preparatory Initiatives** | • Analysis and review of proposed structural changes to the PBR regulatory framework or its central components | • Based on EWSI operational requirements or as directed by Utility Committee |
| **Initiative Specific Reporting** | • Detailed plans or updates on major initiatives or responses to Utility Committee Requests (e.g. SIRP) | • Based on EWSI operational requirements or as directed by Utility Committee |

The Reporting Framework is based on the premise that the PBR Application is the foundation upon which all other reporting is developed. As the PBR Applications are presented and approved only once every 5 (or 3) years, the Reporting Framework is structured with a series of annual reports which would provide more tactical plans and accomplishments based on the Application. The annual reporting consists of an Annual Operational Plan for a given year, and a comprehensive review of results achieved presented as part of the Annual PBR Progress Report. This PBR Progress Report is presented mid year and covers the previous calendar year's performance. The framework also allows specific detailed reporting and updates of significant initiatives or responses to Utility Committee motions or requests. This type of reporting is not based on a predefined schedule as it is dependent on the nature and circumstances of each initiative.

The reporting framework will be used as the basis of reporting for 2022.

# PART TWO: WATER SERVICES - SPECIFIC INITIATIVES

## 8 OVERVIEW

2022 initiatives specific to Water Services are summarized below.

### 8.1 Customer Service

- Improve development processes and communication with City of Edmonton, UDI and IDEA.
- Foster partnerships with Indigenous neighbors, including Enoch Cree Nation and the Metis Nation of Alberta.
- Improve operational coordination with the Regional Water Customer Group (RWCG) customers.
- Develop a strategy for additional communications around water main breaks and outages.

### 8.2 Public Health and the Environment

- Execute the Enhanced Lead Mitigation Strategy in Edmonton and rollout to other communities.
- Complete the E.L. Smith Solar Project and Smart Grid System.
- Conform to ISO 14001 standards across all Water Canada sites.

### 8.3 Employee and Public Safety

- Conform to ISO 45001 standards across all Water Canada sites.

### 8.4 Employee Development

- Provide employees with the tools and information to manage their careers

### 8.5 Operational Performance

- Conduct an energy review across all areas to reduce costs and increase efficiency.
- Build a data-driven Asset Management culture; continue to develop a standardized approach to Asset Management by conforming to ISO 55000.
- Integrate Water and Wastewater Treatment laboratories for increased efficiency.
- Optimize meter reading function through introduction of AMI.
- Develop and implement a biosolids strategy.

### 8.6 Growth and Financial Performance

- Improve business sustainability

# 9 CUSTOMER SERVICE

## 9.1 Improve development processes and communication with City of Edmonton, UDI and IDEA.

Water D&T works closely with developers and City of Edmonton planners to address developers' needs and concerns. Infill development is represented by the Infill Development in Edmonton Association (IDEA). Greenfield development is represented by UDI. Continued coordination with the City of Edmonton and these developer groups provides Water Services the opportunity to serve its customers better through improved planning of work, management of construction impacts and realization of cost efficiencies. Water D&T has established various touchpoints with developer's vis-a-vis development processes, including pre-application meetings, land development applications, biweekly meetings with development engineering consultants, Servicing Agreements, and water servicing.

In particular, Water Services is focusing on improving the consistency of standards enforcement during inspections, coordinating efforts with the City of Edmonton Roadways department to ensure construction and maintenance activities have as minimal an impact to traffic flow as possible, reopening affected areas in a timely manner, and realizing road paving synergies in neighborhood rehabilitation and alley paving programs. EPCOR Utilities (water, power, and drainage) is also working with the City of Edmonton LRT group to discuss scope and schedule requirements for utility relocates needed for the upcoming Valley Line West and Metro North West Line route realignments.

In 2022 and beyond, Water D&T will continue to work to:

- Maintain positive and collaborative interactions with the City of Edmonton regarding surface restoration, traffic disruptions and development permitting processes;
- Continue / implement regular meetings with the City of Edmonton, UDI and IDEA to:
  - develop solutions to ongoing development-related challenges;
  - communicate results of the Infill Cost Share pilot project so that funding for PBR5 can be finalized in the upcoming PBR application;
  - Continue to engage UDI senior leadership through the development of a white paper that reviews regulatory information; infrastructure investment principles, and current / alternative funding approaches; and
- Improve overall processes and ensure proactive and timely communication with all interested parties. Programs under specific review in 2022 include:
  - Inspections Process
  - Developer and Industry Relationship Management

- Infill Water & Sewer Services

## 9.2 Foster partnerships with Indigenous neighbors, including Enoch Cree Nation and the Metis Nation of Alberta

Water Services will be working to continue to advance the principles and joint initiatives stated in the memorandum of understanding signed with Enoch Cree Nation in 2020. This includes finalizing an Indigenous name for the E.L. Smith water treatment plant solar farm site, a place that was former reserve lands for the Nation, and continuing our journey together exploring and showcasing the rich Indigenous history of the lands and waters where EPCOR operates.

Water Services, on behalf of EPCOR Utilities Inc., seeks to finalize a high-level relationship agreement with the Metis Nation of Alberta (MNA) before the end of 2022. Following engagement at the E.L. Smith water treatment plant with the MNA in 2021, discussions led to a request to begin working on how EPCOR Utilities Inc. can formalize its relationship with the MNA in order to ensure transparent communication and regular collaboration of mutual benefit.

## 9.3 Improve operational coordination with the Regional Water Customer Group (RWCG) customers.

The Edmonton water system operated by EPCOR and the water system in the surrounding region, which is operated by seven regional water service commissions (represented by the RWCG), is intended to operate as an integrated network. Decisions and changes made in one part of the network may result in an effect in another part of the network. This strategic initiative will further improve communication, planning and coordination of operational activities, and unplanned events, to ensure an effective and coordinated response to planned or unplanned events.

Water Services has had success coordinating communication strategies for emergency demand measures that can be instituted when plant shutdowns or main breaks interrupt service to regional water customers. A similar approach is now being taken when coordinating operational information between WTP Operations, Water D&T and the RWCG. A secure site has been set up where information such as reservoir levels, pressure data and other important operational information can be shared between all parties, which will improve Water Services' ability to service the regional customers and provide more up to date information of the status of both systems. Continued coordination with the RWCG provides opportunities to plan work, manage emergent work, and realize cost efficiencies for both parties.

## 9.4 Develop a strategy for additional communications for water main breaks and outages.

Currently planned outages are communicated by project managers or contractors in advance of an outage. Notice is typically hand delivered to each property. In the case of an unplanned

outage, notice is provided where possible in person or by leaving a notification at the customer's premise. Outage information is also available on epcor.com on an outage map.

To further improve outage communication, Water D&T will review the process for updating the outage map on epcor.com. This map will be updated to provide more real time information to customers. Water D&T and Public & Government Affairs will also evaluate additional means to notify customers of unplanned outages and updates.

# 10 PUBLIC HEALTH AND THE ENVIRONMENT

## 10.1 Execute the Enhanced Lead mitigation strategy in Edmonton and rollout to other communities.

In March 2019, Health Canada revised the Canadian Drinking Water Quality Guideline for lead in drinking water. The Maximum Acceptable Concentration for lead in drinking water was lowered from 10 µg/L to 5 µg/L and the point of compliance was moved to the tap. In late August 2019, Alberta Environment and Parks released guidance that requires municipal drinking water systems in Alberta to develop lead management plans within 5 years. Lead is usually found in drinking water as a result of leaching from either a lead water service line or from in-premise plumbing system components containing lead. About 1.4% of homes in Edmonton, mainly built prior to 1960, still have a water service line that is lead. The lead service line is comprised of two sections; the utility owned section that runs from the main to the property line and the privately-owned section that runs from the property line to the meter within the building. To be effective, both sections of the service line must be replaced from "main to meter".

On July 16, 2019, Water Services received approval from the City of Edmonton for a non-routine adjustment to initiate an Enhanced Lead Mitigation Strategy. The broad goals of this new program are to reduce public health risk due to exposure to lead in drinking water at the tap, proactively meet the intent of the proposed new Health Canada Guideline and be prepared for further lead regulations in 5 years. The goals of the Lead Mitigation Strategy will be achieved by:

- Addition of orthophosphate to the Edmonton drinking water at both WTPs to reduce lead leaching from all sources (lead service lines and plumbing);
- Accelerated replacement of high priority lead service lines where the lead concentration are expected to exceed the new guideline after orthophosphate addition;
- Elimination of the practice of partial lead service line replacements (i.e. utility-owned section only) by full utility funding of private portion replacements. This will apply to all lead service line replacements including high priority replacements and replacements during water main renewal work and emergency repairs; and.

- An enhanced customer care program that will provide an interim solution for lead exposure for customers with lead service lines until the corrosion control is implemented at the WTP's or the lead service line is replaced.

Design of the orthophosphate dosing systems at Rossdale and E.L. Smith WTPs continued in 2020 and 2021. Construction will be complete and addition of orthophosphate will begin in late 2022. Alberta Environment and Parks provided formal approval to add orthophosphate to the Edmonton water in early 2020 after receiving an environmental impact assessment from EPCOR. Broader communication plans and messaging related to the implementation of orthophosphate for our customers, specifically: residential; institutional, commercial, and industrial, as well as the RWCG and the Alberta Capital Region Wastewater Commission will continue in 2022. A long-term monitoring program starting in 2022 will be implemented to optimize and ensure the effectiveness of orthophosphate dosing across Edmonton.

After initial delays due to the impact of COVID-19 in early 2020, the program for full lead service line replacements (from "main to meter") started in mid-2020 focused on high priority lead service lines and those lead service lines associated with water main renewal projects. The goal is to complete the remaining 65 high priority lead service lines in 2022, essentially completing the accelerated program to replace the original 325 high priority lead service lines identified in the 2019 Enhanced Lead Mitigation Strategy.

### 10.2 Complete the E.L. Smith Solar project and Smart grid system.

In the 2017-2021 Performance Based Rate Application, Water Services included a Green Power Initiative which commits Water Services to obtaining approximately 10 per cent of its energy consumption from locally produced renewable sources starting in 2018. The inclusion of this initiative was to ensure alignment with the City of Edmonton's goals to become a sustainable and resilient city, to reduce Edmonton's greenhouse gas emissions through the development of new renewable energy projects in the Edmonton Region.

Based on the results of analyses of potential alternatives for achieving this green power initiative, Water Services determined that a solar project on the E.L. Smith site is the optimal approach. The E.L. Smith Solar Project is a solar farm that will provide the majority of its output directly to WTP operations. The original rate capacity of the solar farm was 12 MWac, but in January 2022, the AUC approved the capacity increase to 13.6 MWac based on the increased capacity of procured electrical equipment.

In conjunction with the E.L. Smith Solar project, a Smart Grid System which combines the solar power generation with a 4 MW / 9 MWh battery energy storage and intelligent management controls with a primary objective of reducing greenhouse gas emissions. The intelligent management controls are implemented in a "behind the meter" micro grid system at the E.L.

Smith water treatment plant site. The system is also key to exploring the potential of smart grids for increasing hosting capacity of renewables such as solar, stacked applications of storage, and the integration of a behind the meter microgrid into the EDTI electric distribution system with full visibility.

This project has received Natural Resources Canada funding contributions based on the entire scope of the solar farm, battery and smart grid project. The Smart Grid System includes three main components which will be implemented as separate capital projects within EPCOR. The solar and battery projects will be EWSI assets while the Distributed Energy Resource Management System will be an EDTI asset when implemented.

The project received final approval in October 2020 after considerable public and stakeholder consultation. The development permit from the City of Edmonton was received in May 2021 and construction commenced in June 2021. The pandemic, several worldwide storm events and supply chain issues have impacted the project schedule. The solar farm and Smart Grid System are planned to be in service in Q3 2022.

### 10.3 Conform to ISO 14001 across all Water Canada sites.

As part of its environmental regulatory requirements, EPCOR has obtained registration to the internationally recognized ISO 14001 environmental management system standard in its core Edmonton operations. The key benefit to an organization obtaining registration to ISO 14001 is to demonstrate to our customers, clients and regulators that EPCOR manages its environmental risks and seizes opportunities for improvement in environmental performance

Examples of planned continual improvement areas for 2022 include, enhancing the Climate Change Adaptation / River Flooding Resiliency Plan as well as progressing the E.L. Smith Solar Project and Smart Grid System.

## 11 EMPLOYEE AND PUBLIC SAFETY

### 11.1 Conform to ISO 45001 standards across all Water Canada sites.

Management systems require good document management, procedures and internal and external communication plans that set clear objectives, targets, programs and plans. Having this methodology consistent across Water Services has the benefit of improved health and safety performance.

For its core Edmonton operations, Water Services has obtained registration to ISO 45001 safety management system to support continued safety performance improvement.

There are several key benefits to an organization obtaining conformance to ISO 45001, these include demonstrating to our customers, clients and regulators that EWSI manages its health and safety risks, provides a level of due diligence on the management if safety incidents and may offer a competitive advantage to the organization when seeking new business opportunities.

# 12 EMPLOYEE DEVELOPMENT

## 12.1 Provide employees with the tools and information to manage their careers

There will be a continued focus on the development of our employees for the future through empowerment. Employees will be provided with the tools and information required to proactively manage their careers.

In 2022, Water Services will offer two career development opportunities for employees as per the Employee Engagement Action Plan.

# 13 OPERATIONAL PERFORMANCE

## 13.1 Conduct an energy efficiency review across all areas to reduce costs and increase efficiency.

Treating and delivering water to customers in Edmonton consumes a large amount of energy. While the water treatment process tends to be energy intensive, the most significant amount of energy is used in the delivery processes, including pumping water from the treatment plants to the consumers. EWSI has historically implemented a number of energy efficiency initiatives which focus on improving pumping efficiency at the water treatment plants, the field reservoirs, and the booster stations. The City of Edmonton has also defined energy goals and EWSI needs to ensure alignment.

This initiative will review energy utilization across all areas of the business with the intent of reducing overall energy use through increased efficiency.

## 13.2 Build a data-driven Asset Management culture; continue to develop a standardized approach to Asset Management by conforming to ISO 55000.

The Asset Management Framework outlines the approach, processes and tools required to ensure Water Services has accurate and comprehensive information about our assets to meet our goals. The framework aims to provide consistent mechanisms to identify the costs and risks associated with operating and maintaining assets, in addition to standardizing the approach to investing in our assets to manage both cost and risk.

The Asset Management Methods Office has expanded and adapted the current Asset Management Framework to allow greater consistency in how it is applied across various Business Units of Water Services by aligning with the international standard for asset management, ISO 55000. The benefits of this alignment include more efficient and effective implementation of Asset Management across Water Services, which enhances asset reliability as well as risk management, allowing us to provide reliable service in the most cost effective manner. . The focus for 2022 will be on updating Water Canada's Strategic Asset Management Plan to detail asset management objectives and activities for all areas, as well as updating Asset Management Plans across the business, ensuring accurate and complete life-cycle planning.

### 13.3 Integrate Water and Wastewater Treatment laboratories for increased efficiency.

EWSI continues to work on consolidating the wastewater lab at the WWTP and the water lab at Rossdale's Water Excellence Lab Building. Conceptual design work has commenced to rethink and reimagine a more efficient and integrated laboratory space and organizational structure. Co-location will facilitate synergies between the two laboratories by aligning testing functions under one roof, which will produce operational efficiencies, ensure efficacy of testing quality, and enhance employee engagement—ultimately creating a one-lab mentality.

To date a functional testing program review and preliminary design were completed in 2021. In 2022 detailed design will be initiated. The objective is to consolidate into a single lab by the end of 2024.

### 13.4 Optimize meter reading function through introduction of AMI.

The meter reading function will be optimized with the implementation of Advance Metering Infrastructure (AMI) deployment. AMI automatically collects consumption, diagnostic and status data from water meters and transfers that data to a central database for billing, troubleshooting and other uses. The data forms the basis of customer billing for water, wastewater and drainage customers.

In 2022, Water Services is completing all planning requirements in order to start installing AMI devices in 2023.

### 13.5 Develop and implement a biosolids strategy.

Between approximately 25,000 and 30,000 dry tonnes of digested biosolids are produced by the Gold Bar and Alberta Capital Region wastewater treatment facilities annually. Since the 1970's, biosolids have been sent to the Clover Bar lagoons for additional processing and disposal, mostly through composting, landfilling and agricultural land application. Over time, the inventory of biosolids in the lagoons have increased as disposal has not met production. Additionally, the City of Edmonton made a decision to close down composting operations, due to the integrity of the

facility. EPCOR contracts with the city to dewater a portion of the biosolids in a facility that is tied into the composting facility. It is anticipated that the dewatering facility will cease operation by the end of 2023.

In late 2019, the development of a biosolids management program was started, which builds upon past strategies. The objectives of the program are to continue to find ways to beneficially dispose of biosolids, in a financially and environmentally sustainable manner, while reducing the inventory of biosolids in the Clover Bar lagoons. A detailed long-term strategy will be further developed in 2022, which will include a detailed review of biosolids generation forecasts, regulatory and market changes, assessments of emerging technologies and quantification of environmental benefits, including from a GHG perspective.

# 14 GROWTH and FINANCIAL PERFORMANCE

(See common initiatives.)

# PART THREE: DRAINAGE SERVICES – SPECIFIC INITIATIVES

## 15 OVERVIEW

2022 initiatives specific to Drainage Services are summarized below.

### 15.1 Customer Service

- Build programs, processes and training to provide a seamless customer experience.
- Enhance relationship with the City of Edmonton to collaboratively deliver services in the best interest of the customer.
- Execute the Corrosion and Odour Mitigation Strategy (CORe).
- Execute the Stormwater Integrated Resource Plan (SIRP).

### 15.2 Public Health and Environment

- Optimize the impact of our operations on the environment and the impact of the environment on our operations.
- Develop culture of environmental leadership.
- Identify and manage emerging environmental risks.

### 15.3 Employee and Public Safety

- Reduce tolerance towards safety related risks and cultivate a culture of safety.
- Ensure the public safely engages with drainage assets.
- Train staff for competency and confidence.

### 15.4 Employee Development

- Leverage advancements in technology to support our people and enable continuous improvement.

### 15.5 Operational Performance

- Identify and manage emerging risks.
- Optimization through a systems-based approach to planning and cross-departmental collaboration.

### 15.6 Growth and Financial Performance

- Evaluate third party funding model and risks.
- Develop stormwater rate structure.

# 16 CUSTOMER SERVICE

Drainage Services' customers and stakeholders include residents of Edmonton, business owners, City Council, and different areas of government. Our services, programs and projects directly or indirectly impact these stakeholders. We want to ensure open lines of communication and mutual understanding of our programs and projects. We want to demonstrate how we add value to our customers and stakeholders through five initiatives as follows:

## 16.1 Build programs, processes and training to provide a seamless customer experience.

We endeavor to be trusted by our customers and stakeholders when engaging with Drainage Services. We strive to engage in collaborative and transparent planning and meeting our commitments to the community. To that end, we will be focusing on the following primary objectives in 2022:

- Ensure a continued decrease in the number of escalations.
- Ensure 85% of customer calls are responded to within 2 business days.

## 16.2 Enhance relationship with the City of Edmonton to collaboratively deliver services in the best interest of the customer

EPCOR and the City of Edmonton are committed to collaboratively delivering services in the best interest of our customers. To achieve this goal, EPCOR and the City of Edmonton have stood up a multi-tiered information sharing and problem solving framework. EPCOR and the City's leadership team meet quarterly and intermediate managers meet monthly in targeted working groups focused on operations and maintenance, long range planning and growth/development, and capital program delivery. Customers are a key topic in each working group agenda. Each working group has additional initiatives that involve front line leaders working to collaboratively deliver services with minimal impact and maximum benefit to customers. Examples of initiatives at this level include flash flooding emergency response planning.

## 16.3 Execute the Corrosion and Odour Mitigation Strategy (CORe).

Over the past decade, residents of Edmonton have reported over 10,000 instances of odours related to the sanitary and combined sewer network. To develop a robust strategy to address odour issues, Drainage Services has conducted public consultation, engaged with community members across the City, conducted advanced sewer air monitoring campaigns and expanded its sewer asset inspections. Drainage Services has produced a CORe Strategy that focuses on preventing the formation of $H_2S$ gas, which will reduce community odour impacts and lengthen the life of sewer network assets.

The CORe Strategy was presented to Utility Committee on June 24, 2019. The Strategy was developed using similar principles and approaches to EPCOR's SIRP to determine an optimized mix of operational and capital solutions to reduce corrosion and odour.

The capital projects and operating activities included in the strategy address three focus areas:

1. Prevent the formation of H2S gas in the sewer system
2. Control the release of air from the sewer system, and
3. Adapt the system using real-time monitoring technologies and improved inspection

| 2022 CORe STRATEGY ACTIONS | |
|---|---|
| PREVENT | - Continue the design and construction process on the Duggan bypass tunnel. The detailed design was completed in 2021 and contracting for construction is in progress.<br><br>- Continue to construct access manholes and implement trunk inspection and cleaning activities throughout the City.<br><br>- Continue to implement rehabilitation projects as deficiencies are identified through the trunk inspection program |
| OPTIMIZE | - Throughout 2021 H2S monitoring was completed at multiple pump stations along with an assessment for pumping operations and wet well management to understand the specific drivers of odour generation for each location. From this work there is a mix of chemical treatment additions, pump replacements and station configuration changes being implemented in 2022 and beyond to reduce odours in the system |
| MONITOR | - Continue to purchase additional odour monitoring equipment and explore additional synergies with SIRP Predict theme. |
| CONTROL | - Continue to modify existing drop structures throughout the City |

## 16.4 Execute the Stormwater Integrated Resource Plan (SIRP).

SIRP, presented to the City of Edmonton Utility Committee and City Council in 2019, is a $1.6 billion system wide integrated approach over the next 20 to 30 years to mitigate flood risk by reducing the health and safety, financial and social risks of flooding with lower overall capital investment than compared to traditional engineering approaches, through the incorporation of green infrastructure and operational programs that support building community resiliency and leveraging advanced technologies to better manage storm water volumes during storm events.

| 2022 SIRP STRATEGY ACTIONS | |
|---|---|
| SLOW | - Continue to engage with the City of Edmonton on Phase 2 of the review process for each dry pond with completed conceptual design including Parkdale and Lauderdale in conjunction with the local community consultation activities that occur during this phase of the project<br><br>- Implementation of LID in conjunction with planned projects with City departments including roadways and parks. LID installation with commercial developments and community leagues is also progressing. |
| MOVE | - Incorporation of the piping modifications required to accommodate the approved dry ponds identified in the SLOW theme including Kenilworth, Lauderdale and Parkdale. |
| SECURE | - Continue the implementation of the maintenance program for Inflow/Infiltration reduction through sealing of sanitary/combined sewer lines and manholes in the vicinity of topographical sag locations throughout the City<br><br>- Develop the overall impacts and implementation plan for automatic gates in river valley outfalls in the Cloverdale neighbourhood<br><br>- Implementation of the Enhanced Flood Proofing Program and targeted outreach to the higher risk properties to promote backwater valve installations and additional on premise flood proofing activities. Focus area for 2022 will be the River valley neighbourhoods |
| PREDICT | - Continue the implementation of the SIRP Dashboard project to enable improved situational awareness during flooding events through the consolidation in one interface the various monitoring systems used within the Drainage utility. |
| RESPOND | - Continue to support emergency response improvements in the higher risk areas, including working with property owners and the City of Edmonton to update emergency response plans for impacted areas. |

# 17 PUBLIC HEALTH and the ENVIRONMENT

Drainage Services is an environmental company that protects the watershed and contributes to a healthy river. Environmental challenges include the impacts of flooding, responding to releases, monitoring the quality of the river water, and ensuring compliance, reporting and adherence to international ISO standards. Drainage Services has defined three strategies to realize this commitment:

### 17.1 Optimize the impact of our operations on the environment and the impact of the environment on our operations.

As an environmental steward in Edmonton, Drainage Services will minimize our environmental impact in all aspects of our operations. Drainage Services has been working with the City of Edmonton on the climate change initiative through the work on SIRP. The purpose of this plan is to identify work that needs to be accomplished to reduce the impact of stormwater flow on Edmonton residents and businesses. Drainage Services is also participating in the Flood Hazard Identification Program with Alberta Environment and Parks.

In 2022, Drainage Services will work towards ensuring that all environmental work is aligned with projects in Planning and Engineering so that all projects reflect considerations arising from the SIRP, our CORe, and our goals to reduce flow to the river.

### 17.2 Develop a culture of environmental leadership

Drainage Services continues to work towards further developing behaviours that support environmental stewardship for our customers and the communities we serve. Drainage Services will begin to identify and develop environmental criteria to be included in field activities, infrastructure inspections and related project and construction activity to support our employees in proactive identification of environmental impacts related to collection system construction, maintenance and operations. In 2022, environmental criteria will be developed and incorporated in to five inspection activities, and going forward Drainage Services will continue to develop criteria and associated resources to decrease the environmental impact of our activities.

### 17.3 Identify and manage emerging environmental risks

In order to further develop and create a culture of environmental leadership through the management of emerging environmental risks Drainage Services will continue to build on associated works related to climate change initiatives with the City of Edmonton:

- Continue to implement SIRP – Secure Inflow /Infiltration strategy, CORe odour monitoring and odour control strategy.
- Update Drainage Design and Construction Standards to incorporate adaptation measures for Urban Wildfire and Ice Accumulation.
- Develop vegetation management plans for at risk Drainage Services infrastructure to prevent impact from Urban Wildfire and Ice Accumulation.

## 18 EMPLOYEE and PUBLIC SAFETY

EPCOR puts safety first in everything we do and Drainage Services has emphasized this approach across its operations. We will ensure that employees and contractors have the required training

and support to ensure safety of everyone on the team. We will focus on providing strong safety leadership and improving our awareness of hazards and risks. In order to achieve our safety objective, we are focusing on four strategies.

### 18.1 Reduce tolerance towards safety related risks.

In order to reduce our tolerance towards safety related risks, Drainage Services is committed to developing appropriate plans and programs in order to shift our attitude about safety and the achievability of zero injuries. In order to achieve this, we have established the following objectives:

- develop customized safe work plans for each unique work area;
- implement a new Contractor Management Program including a framework and guidelines for managing prime contractor accountabilities;
- Analyze the Drainage Services risk register to identify and mitigate tasks with high residual risk;
- Explore technology and alternate work methods to eliminate or mitigate high risk activities;
- Contact all high risk properties identified in Stormwater Integrated Resource Plan.
- Reduce customer and community health and safety risk by completing SIRP ERPs for high risk basins.

### 18.2 Ensure the public safely engages with drainage assets

Currently EPCOR owns and operates approximately 240 Stormwater Management Facilities in Edmonton, with the majority being located in areas north of 137 Avenue, west of the Anthony Henday and south of Whitemud Drive. These facilities are primarily viewed as an amenity, a water feature or a pond by homeowners and developers and through the years have drawn customers to use these facilities for recreation. A top priority for EPCOR is to focus on educating the public as to the dangers of these facilities and how they perform an operational function for the overall drainage system. An extensive education campaign, along with physical facility improvements will be undertaken in 2022.

### 18.3 Cultivate a culture of safety leadership

A culture of safety leadership is required to ensure frontline employees will continue to have a strong focus on safety. Our leadership team will demonstrate employee support by ensuring that incidents are reported accurately within our Event Reporting System, investigations are completed in a timely manner, and learnings are shared with all employees. The main objective is to improve incident reporting throughout all of Drainage Services. Another objective is to have all senior managers and above completing safety training.

- Practice two Emergency Operations Center emergency response drills,
- Conduct 1 business unit wide safety meeting; and
- Use personal stories to connect with people about impacts of health and safety.

### 18.4 Encourage ownership of safety at all levels.

In addition to safety leadership, we will encourage employee ownership and involvement at all levels. A foundational piece of this will be to ensure that all staff have the skills to identify workplace hazards and implement controls to eliminate them. We will give staff a voice through field involvement in safety initiatives. Key objectives include:

- Continue to focus on hazard recognition and near miss reporting. Near miss reporting is a leading indicator of safety involvement. Reporting provides information and trends and it directly involves employees in the identification of work place hazards.
- Train all people leaders to lead an incident investigation. This includes analyzing root causes and determining the appropriate corrective action. All major incidents investigated by cross functional multi-level team. Ensure Event Report System event fields are populated with data that add value to analytics and trending.

## 19 EMPLOYEE DEVELOPMENT

### 19.1 Leverage advancements in technology to support our people and enable continuous improvement

Employee development is a strategically important priority that will ensure a strong supply of skilled workers and leaders in the coming years, and technology will be a critical tool used to drive this initiative.

Key activities scheduled for this upcoming year include the implementation of a digital learning platform to facilitate greater accessibility for learners by enabling any place, any pace and any time learning and the migration to online course delivery for all professional and leadership development products. A new online course for leaders relating to how to engage in effective career conversations will also roll out this year.

Frontline employee development activities will include a career development event that will incorporate virtual and in-person components, new online course delivery related to clarifying roles and accountability, respectful workplaces and continuous improvement and an online career development portal that provides information, resources, occupational profiles, and supplemental videos to assist employees in exploring and mapping out a career path.

# 20 OPERATIONAL PERFORMANCE

Drainage Services is focusing on the review and improvement of our processes. Continual review of processes, systems and tools will drive efficiencies and optimization. Key strategies include:

## 20.1 Identify and manage emerging risks.

Through this and previous planning processes, Drainage Services identifies business risks and then formulates/optimizes appropriate mitigation strategies. The on-going objectives include:

A key component of identifying and assessing emerging risks is to be plugged into industry networks. A "lunch and learn" program will be implemented for staff to present on, and share, industry knowledge. Operational excellence initiatives will be pursued that include a rationalization our inventory, rationalization of crew and equipment utilization, and optimization of preventative maintenance programs. The SANIRP will also be initiated, which will establish a risk based plan to address various system issues such as flooding, odour, asset condition and operational issues. An approach to prioritize capital projects will also be developed to manage within our approved PBR envelope.

## 20.2 Optimization through a systems-based approach to planning and cross-departmental collaboration

Starting in Q4 of 2021, Drainage Services has been undertaking a review of its internal processes in the context of how critical collection and storm water system asset condition assessments and risk rankings drive our ongoing maintenance and capital upgrade programs. This initiative is referred to as the Drainage Services "End to End Process Review". For each critical system asset type, a review of the processes and hand-offs from planning, engineering design, project management, construction and maintenance perspectives are undertaken to ensure there are no gaps and that hand-offs are seamless and transparent. It is anticipated these reviews will be completed by Q4 2022.

# 21 GROWTH AND FINANCIAL PERFORMANCE

Drainage Services is pursuing efficiencies through process improvement, the implementation of telematics, the development of a construction strategy and the identification of operational synergies with the Water business unit. In addition to these four primary strategies to improve our financial performance, we are also pursing the following initiatives:

## 21.1 Evaluate third party funding model and risks

Drainage Services has worked with the City of Edmonton Integrated Infrastructure Services department to develop a Cost Sharing Agreement that is used by the LRT Expansion & Renewal

and the Infrastructure Delivery Branches to jointly design and construct Drainage and City Assets using single contracts to engage a design consultant and contractor. This third-party model allows these capital projects to be delivered more efficiently and in a shorter time frame.

Drainage Services has also worked with the City of Edmonton Integrated Infrastructure Services department on a contributed asset model that allows the Infrastructure Delivery Branch to proceed with construction of Drainage Assets under a model using inspection and design criteria to determine the requirement for the asset replacement and a cost recovery model for the asset that is being replaced.

## 21.2 Develop stormwater rate structure

Prior to the next drainage PBR application, EWSI intends to review and potentially revise the rate structure for stormwater rates. In reviewing rate designs, consideration of both the level of the rates and the structure of the rates. Level refers to the total revenue to be collected from a rate design; while structure refers to how the revenue is collected, or how the customer is ultimately charged. Rate design can be used to achieve a number of goals, but the most paramount is fairness across customers. The rates and the rate structure needs to be based upon a fair allocation of total cost of service among the customer classes.

The current stormwater utility rate design consists of a single rate applied to the product of:

- The area of the property in square metres and, for multiple units sharing a single building, the proportion of the building lot area attributable to each unit;
- The development intensity factor, which measures the portion of lot being used for its intended development. The development intensity factor is set at 1.0, except for those properties where owners demonstrate that they contribute significantly less stormwater runoff per property area to EWSI's land drainage system during rainfalls than other similarly-zone properties through the use of retention/detention ponds or other stormwater best practices.
- The runoff coefficient, which measures the permeability of the lot's surface (i.e., grass versus concrete), based on land zoning. The runoff coefficient ranges from 0.20 (e.g., agricultural zone AG) to 0.95 (e.g., commercial business zone CB2). As point of reference, a single-detached residential home (Zone RF1) has a runoff coefficient of 0.50.

A number of factors, such as the recent SIRP and the associated changes to deal with flooding as well changing home lot sizes, were not considered when the current stormwater rate structure was determined. In addition, the City's Rezoning Bylaw initiative has to be reviewed as it may necessitate adjustments to the runoff coefficients. A review of the current stormwater rate structure is warranted to ensure that these changes are appropriately accounted for and rate payers continue to pay in accordance with their utilization of the stormwater system. This

initiative will require considerable stakeholder engagement to ensure that the proposed rate structure aligns with stakeholder expectations.

Drainage Services had initially contemplated making some changes to the stormwater billing system during the 2022-2024 term (e.g. moving all cemeteries and golf courses into billing). These changes have been place on hold pending the more comprehensive stormwater rate structure review.

## PART FOUR: LIST OF ACRONYMS

AMI - Advance Metering Infrastructure

AUC – Alberta Utilities Commission

CORe - Corrosion and Odour Mitigation

DEI – Diversity, Equity and Inclusion

EDTI - EPCOR Distribution &. Transmission Inc.

EWSI – EPCOR Water Services Inc.

IDEA - Infill Development in Edmonton Association

MNA - Metis Nation of Alberta

PBR – Performance Based Regulation

RWCG - Regional Water Customer Group

SANIRP – Sanitary Integrated Resource Plan

SIRP – Stormwater Integrated Resource Plan

SSSF - Sanitary Servicing Strategy Fund

UDI – Urban Development Institute

WTP - water treatment plant

WWTP - Gold Bar Wastewater Treatment Plant

Water D&T - Water Distribution and Transmission