

CAPITAL PROFILE REPORT

PROFILE NAME: **SOURCE SEPARATED ORGANICS PROGRAM**
 PROFILE NUMBER: **20-81-2041**
 DEPARTMENT: **Utilities**
 LEAD BRANCH: **Waste Services**
 PROGRAM NAME:
 PARTNER:
 BUDGET CYCLE: **2019-2022**

FUNDED

PROFILE STAGE:	Approved
PROFILE TYPE:	Standalone
LEAD MANAGER:	Denis Jubinville
PARTNER MANAGER:	
ESTIMATED START:	September, 2019
ESTIMATED COMPLETION:	December, 2022

Service Category:	Utilities	Major Initiative:
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GROWTH	RENEWAL
20	80

PREVIOUSLY APPROVED:	31,527
BUDGET REQUEST:	-
TOTAL PROFILE BUDGET:	31,527

PROFILE DESCRIPTION**Initiative Description**

This business case proposes major changes to the current waste collection program and the way single-unit residents set out their waste for collection in the City of Edmonton. These changes will include three stream collection and processing streams instead of the current two streams. The associated capital profile includes funding for purchasing carts and associated accessories, automated collection and crew maintenance vehicles, storage yard and processing equipment required to successfully roll out and manage this program.

In June 2017, the first steps were taken on the path towards the future of waste services when Administration presented the 2018-2020 Waste Services Business Plan to Utility Committee which identified increasing residential diversion activities as an essential focus area for Waste Services. This update, along with the findings from an extensive research study between the summer of 2017 and January 2018, set the stage for the recommended activities in CR_5184 Waste Management Strategy Update presented to the Council in March 2018. Council approved seven motions for Waste Services during this Strategy Update, which included: planning a source-separated organics program for organic waste processing and collection, with planned implementation starting in Fall 2020; providing a report on alternate collection methods for grass, leaf and yard waste; and continuing engagement with the citizens on the implementation of potential waste diversion programs.

In August 2018, Administration submitted reports on the Source Separated Organics (SSO) Pilot (CR_5832) and Alternate Collection and Diversion Options for Grass, Leaf and Yard waste (CR_5826). These reports outlined the options that would be included in the public engagement activities along with a demonstration phase for the program changes outlined in CR_5184 Waste Management Strategy Update. Council approved the demonstration phase with the 120 litre green organic cart and alternate collection of leaf and yard waste pilot programs in August 2018, thus giving approval for administration to proceed with planning for the implementation of an organics program city-wide.

The proposed waste collection and processing streams are:

- Source Separated Organic (SSO) Stream
- Seasonal Leaf and Yard Waste (L&YW) Stream
- Garbage Waste Stream
- Recycling Waste Stream

Source Separated Organic (SSO) Stream: Organics separation at the source is an effective method of reducing the environmental impact of solid waste. In the SSO program, households will segregate compostable kitchen organic waste materials, such as food waste. This organic waste will be set out for collection separately from their garbage. Once the organic waste is collected by the City, it can be processed directly at organics processing facilities (ie. ADF) without being pre-processed at the IPTF with other household garbage.

Seasonal Leaf & Yard Waste (L&YW) Stream: The seasonal L&YW program includes separate L&YW collection program and the free L&YW drop off service. Residents will be encouraged to set out their leaf and yard waste, separately from their garbage and SSO on predetermined dates from spring to fall. The L&YW will be collected by Waste Services. Residents will also be provided with the opportunities to drop off L&YW at the Eco Stations, Big Bin Events, and the Edmonton Waste Management Centre for free. Such materials can then be processed directly at the cure site without going through a processing facility.

Garbage Stream

Removal of the organic waste from the garbage will decrease the total tonnage of materials in this stream. In addition, residents will be limited to the space available in their black carts for their garbage materials. This increases the incentive to maximize recycling and organic separation. Waste Services will continue to provide collection of garbage to the residents. This stream will capture all remaining materials that do not enter the organic or the recycling stream.

Recycling Stream

Waste Services will continue to collect recyclable materials at the curbside. Residents will continue to separate recyclable materials such as plastic, paper, glass bottles, metal cans etc. in their blue bags and set it out for collection at the curb.

In Scope**Waste Collection**

- Addition of automated collection of source separated organic stream.
- Addition of seasonal leaf and yard waste curbside collection program.
- Changing the current method of garbage collection from manual to automated.
- Potential change in collection method and/or frequency of the recycling stream.

Residential Waste Drop off

- Impact on Big Bin events, Eco-station programs and the Residential Transfer Station

Processing

- Change in processing requirements related to the new Organics Processing Facility (OPF), Curesite, IPTF Pre-Processing facility, MRF and landfill.

Financial

- Capital and operating budgets to support the program changes.
- Net Present Value (NPV) analysis.
- Revenue Requirement (RR) analysis
- Utility rate change for different black cart sizes.

Education, Outreach and Enforcement

- Development and delivery of education and outreach materials, programs, and strategies.

Out of Scope

The following services, although aligned, are managed separately and considered out of scope in this business case:

- Multi-unit residential sector receiving waste container collection service.
- Non-residential waste programs.
- Waste Bylaw update and related resourcing requirements.
- Waste Management Policy update.
- External Curesite Project: capital and operational expenses.
- OPF Business Case and financial approval.
- MRF retrofit.

PROFILE BACKGROUND

The current residential waste collection programs need significant changes to support the City's current 90% single unit residential diversion goal. The two stream residential collection offered by Waste Services allows for collecting unlimited comingled garbage (organic and refuse) and recycling at the curbside. The materials are processed at Edmonton Waste Management Centre (EWMC) where a portion is diverted from landfill. In the last few years, Edmonton's single-unit residential diversion rate has been slowly decreasing and it reached a low of 36% in 2018. The reduction in single unit residential waste diversion is linked to current challenges in processing at EWMC, including the seasonal operation of the Edmonton Co-Composting Facility, and the continued delay of full operation of Enerkem Alberta Biofuels. The Single Unit Residential Waste Diversion Rate was restated in 2018 based on a review of the City Auditor. Specifically, it was noted in the 2018 City Auditor report that Waste Services cannot achieve its 90% diversion target through the existing program, and will need to implement new waste diversion programs in order to achieve this goal.

PROFILE JUSTIFICATION**Opportunity**

Edmonton's single unit residential diversion rate as of 2018 was 36 percent. Edmonton is currently faced with a large gap between this current residential diversion rate and the 90 percent goal. Getting to 90 percent requires focus on the entire waste stream, starting with how households are asked to manage their waste in the home. Waste Services' Strategy Update (CR_5124) outlines the path and program changes that will be required to achieve this goal.

The gap between the projected diversion rate and the 90 percent goal could be best addressed by aligning Edmonton's waste management practices with current best practices for municipal waste. It requires focus on the entire waste stream, including diversion, sorting activities, as well as reduction and reuse initiatives, undertaken at the household level, and allows for more effective processing of waste feedstock, with reduced moisture and contamination challenges.

This unique opportunity allows Waste Services to design a waste collection program at the same time as developing an organics processing facility using current technology. By making this combined decision and improving on a number of other processes, Waste Services is able to further advance towards its goal of diverting up to 90 percent of residential waste from landfill.

Anticipated Outcomes

The following anticipated outcomes will be achieved through this updated program:

- An estimated increase in the current diversion rate by approximately 8-12 percent to contribute towards the 90 percent single unit residential diversion target. This forecasted diversion rate impact is predicated on the assumptions that waste sorting and diversion facilities fully function at the EWMC, end product markets for all recyclable commodities are available, and that residents fully participate in the proposed program change
- An expected decrease in the amount of garbage set-out by single unit residents
- A cleaner organics stream as an input to ADF processes, resulting in an increase in higher quality compost
- Behavior changes in single unit residents, which includes how residents sort and set out their household waste
- Reduction in the expected moisture content in Refuse Derived Fuel.

STRATEGIC ALIGNMENT

This business case aligns with the Corporate Strategic Objective related to Climate Resilience, the Service Objective related to Environmental Protection, and the Supporting Objective related to Environmental Stewardship. This profile aligns with the new strategic goals of the City of Edmonton and the City's Waste Management Policy C527 which commits to delivering sustainable waste service exceeding provincial waste diversion and processing standards. This profile also aligns with Waste Services Integrated 25-Year Strategic Outlook.

ALTERNATIVES CONSIDERED

Several options were reviewed, please refer to "Alternative Analysis" Section of the attached business case for details

COST BENEFITS

Please refer to "Single-Unit Set-Out Business Case Recommendation" Section of the attached business case for detailed financial analysis.

KEY RISKS & MITIGATING STRATEGY

Please refer to "Single – Unit Waste Set-Out Business Case Key Risk(s) and Mitigating Strategy" Section of the attached business case.

RESOURCES

Both the recommended set-out program demands 16.5 new permanent and seasonal FTEs required from 2022 onwards. On top of this, it also requires additional 19 temporary FTEs to cover the cart roll-out program, public education and outreach and GIS mapping between 2020 and 2023.

CONCLUSIONS AND RECOMMENDATIONS

This business case demonstrates the need to transition the single-unit waste collection program & the importance of separating the organic waste from the current mingled garbage stream. The recommended set-out solutions together with seasonal L&YW pick-ups & extra big bin events not only address residents' waste disposal demand, but also make a positive impact on the residential diversion rate. Tag-a-bag program was proposed to dispose additional garbage during the week or holidays at extract costs to the residents.

- 120L green cart with top-up: weekly in spring, summer and fall; bi-weekly in winter
- Manual seasonal collection of L&YW: 2 times in spring and 2 times in fall
- Resident choice between 120L or 240L black cart: bi-weekly
- Manual collection of recycling in blue bags: weekly

CAPITAL PROFILE REPORT

CHANGES TO APPROVED PROFILE

2022 Fall SCBA (#22-31, CFO.34): Change in source of funding by using excess cash to finance the capital program instead of borrowings, in order to save interest expenses. The adjustments result in no overall impact on the budget within the program.

2023 Fall Utility SCBA (#23-32, Att1-5.1): The Source Separated Organics (SSO) project is completed. This is the final SCBA to align funding sources as Retained Earnings was used instead of the approved SLD funding source. The Utility was able to use existing cash in 2022 to fund final expenditures (Carts & RFID Readers/Cameras) while minimizing borrowing at high interest rates.

CAPITAL PROFILE REPORT

PROFILE NAME: **Source Separated Organics Program**
 PROFILE NUMBER: **20-81-2041**
 BRANCH: **Waste Services**

FUNDED
 PROFILE TYPE: **Standalone**

CAPITAL BUDGET AND FUNDING SOURCES (000's)

	Prior Years	2024	2025	2026	2027	2028	2029	2030	2031	2032	Beyond 2032	Total	
APPROVED BUDGET	Approved Budget												
	Original Budget Approved	-	-	-	-	-	-	-	-	-	-	-	-
	2019 Cap Capital Budget Adj (one-off)	51,494	-	-	-	-	-	-	-	-	-	-	51,494
	2019 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2020 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2021 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2021 Cap Release to Corp Pool	-10,145	-	-	-	-	-	-	-	-	-	-	-10,145
	2022 Cap Administrative	-	-	-	-	-	-	-	-	-	-	-	-
	2022 Cap Carry Forward	-	-	-	-	-	-	-	-	-	-	-	-
	2022 Cap Release to Corp Pool	-9,822	-	-	-	-	-	-	-	-	-	-	-9,822
	2023 Cap Council	-	-	-	-	-	-	-	-	-	-	-	-
Current Approved Budget	31,527	-	-	-	-	-	-	-	-	-	-	31,527	
Approved Funding Sources													
Self-Liquidating Debentures	24,712	-	-	-	-	-	-	-	-	-	-	24,712	
Waste Mgt Retained Earnings	6,815	-	-	-	-	-	-	-	-	-	-	6,815	
Current Approved Funding Sources	31,527	-	-	-	-	-	-	-	-	-	-	31,527	

BUDGET REQUEST													
Budget Request	-	-	-	-	-	-	-	-	-	-	-	-	-

REVISED BUDGET (IF APPROVED)													
Revised Budget (if Approved)	31,527	-	-	-	-	-	-	-	-	-	-	-	31,527
Requested Funding Source													
Self-Liquidating Debentures	24,712	-	-	-	-	-	-	-	-	-	-	-	24,712
Waste Mgt Retained Earnings	6,815	-	-	-	-	-	-	-	-	-	-	-	6,815
Requested Funding Source	31,527	-	-	-	-	-	-	-	-	-	-	-	31,527

CAPITAL BUDGET BY ACTIVITY TYPE (000's)

REVISED BUDGET (IF APPROVED)	Activity Type	Prior Years	2024	2025	2026	2027	2028	2029	2030	2031	2032	Beyond 2032	Total
	Other Costs	31,527	-	-	-	-	-	-	-	-	-	-	31,527
	Total	31,527	-	-	-	-	-	-	-	-	-	-	31,527

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	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-