



## Legislation Text

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**TAMRMS#: B06**

### **Zero Waste Process**

Presented by: Rod Valdes, Director of Economic Development

### **RECOMMENDATION(S)**

1. That the report titled "Zero Waste Discussion Paper" provided as an attachment to the June 11, 2018 Agenda Report entitled "Zero Waste Process", be received as information.
2. That a Zero Waste / Alternative Servicing Conceptual Design be integrated into the investigation requested by Council Motion CM-18-031 titled "Delivering Utility Services".
3. The Zero Waste / Alternative Servicing Conceptual Design should include an initial engineering design (pre-FEED) of an emergent scalable Zero Waste technology located within or adjacent to the Lakeview Business District, taking into account logistics of waste delivery use of resultant electricity and heat, integration with water reuse systems; and integration within an eco-industrial park and/or adjacent net zero communities; and an estimate of the revenue required to provide a return on investment to the City while simultaneously providing lower utility costs for businesses and residents.

### **PURPOSE OF REPORT**

To provide Council with information around Zero Waste Processes including technical, regulatory and financial feasibility.

### **COUNCIL DIRECTION**

On Feb 27, 2017 Council passed the following motions:

(CM-17-008)

"That Administration prepare a report for Council's review before the end of Q3 of 2017 of the potential feasibility, land requirements, estimated capital and operating costs, social and environmental and economic benefits, and risks of implementing a zero waste process and ancillary processes and infrastructure in St. Albert to manage its solid waste, similar to what is being implemented in the Wood Buffalo region."

On May 15, 2017 Council granted a time extension "before the end of Q4 of 2017".

On November 27, 2017 Council granted a time extension “extended to Q2 - 2018”.

## **BACKGROUND AND DISCUSSION**

With considerable work done to date, available industry information, and extensive third-party analysis on waste models, administration has determined that the proposed Zero Waste model is feasible for the City of St. Albert and that it could potentially provide better long term net sustainability results. In conjunction with the Utility Study, using relevant funds already allocated by Council, present timing supports the simultaneous study of this Zero Waste model to confirm achievable results.

Approximately 64% of the residential municipal solid waste (MSW) collected by COSA is currently diverted from landfill, thanks to a successful source separation program that allows recyclable materials (blue bags) and organics (green bins) to be sent for recycling and composting respectively. The City plans on increasing this diversion to 75% by 2020 by encouraging greater diligence in source separation, although this will require greater educational, and likely enforcement costs to achieve this objective.

However, to achieve 100% diversion (or “Zero-Waste”), the remainder (“garbage”) will require further processing. Large-scale, centralized facilities able to process MSW are technically and regulatorily feasible within urban areas. However, costs to process MSW in a large centralized facility, in particular sorting costs, are currently higher than the cost of landfilling. Furthermore investment required to build a large facility places a large amount of capital at risk.

In light of this, Administration also reviewed emergent smaller-scale, de-centralized technology that is able to process unsorted MSW. Containerized Zero Waste Processes have the potential for achieving lower costs than large facilities in that they require little to no pre-sorting. Furthermore, these containerized units are scalable, permitting waste processing capacity to balance with waste supplied, minimizing risk of overinvestment in capital and ensuring appropriate investment cashflows (“the right project at the right time”) to permit capital investment in other projects Council deems to be priorities. One of the emergent technologies being examined is currently being demonstrated in Canada with support from a local University and a Green Municipal Fund grant (FCM), and CSA approval is expected by the end of 2018.

A high-level review of Zero Waste Processes also revealed several potential value add services. Zero Waste Processes, when paired with Waste to Energy technology, can provide power and heat through micro grids and district heating systems to nearby large users in commercial/industrial parks (“Eco-Industrial Parks”), or to high density residential developments (including “net-zero” developments). Also wastewater recycling technology that separates-out biosolids has potential to provide additional feedstock for Waste to Energy processes, and provide a non-potable but still potentially usable water source, thereby potentially reducing traditional land servicing cost requirements by reducing both wastewater and water supply infrastructure required.

Zero Waste Processes also may provide numerous Economic Development opportunities. The generation of MSW into post process ash, metal, plastic, and glass can provide commodity input for local manufacturers and/or offset municipal capital project costs. Also the establishment of Zero Waste processes may serve to attract clean tech industries, and training and research institutions that are aligned with similar environmental goals or unrelated ventures wishing to have sustainability

associated with their brand.

## **STAKEHOLDER COMMUNICATIONS OR ENGAGEMENT**

Administration and its consultant consulted with established and emergent Zero Waste technology providers, other municipalities in Alberta and Canada, and the Alberta government through various departments in assessing Zero Waste Processes.

## **IMPLICATIONS OF RECOMMENDATION(S)**

Financial:

None at this time.

Legal / Risk:

None at this time.

Program or Service:

None at this time.

Organizational:

None at this time.

## **ALTERNATIVES AND IMPLICATIONS CONSIDERED**

None at this time.

## **STRATEGIC CONNECTIONS**

Zero Waste Processes have potential strategic connections to the following priorities as given in the City of St. Albert Strategic Plan 2018-2021:

Strategic Priority #2 Economic Development: Enhance business/commercial growth.

- St. Albert will work towards an innovative, investment-positive environment that will support and encourage the development of new, existing and emerging sectors.

Strategic Priority #6 Environmental Stewardship: Explore innovative environmental and conservation opportunities.

- Seek innovative practices to protect waterways and green spaces and reduce our environmental footprint, to ensure the vitality of our natural resources for future generations.

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Committee/Department: Economic Development

General Manager: N/A

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