

## INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) ORGANICS DIVERSION STRATEGY

---

### EXECUTIVE SUMMARY

The Industrial, Commercial and Institutional (ICI) sector is the largest contributor to waste disposed at City of Calgary landfills, with the organics portion accounting for approximately one third of the total ICI waste volume in 2014. This report provides details of a strategy to divert ICI organics, as directed by Council 2014 May 12 when the ICI Waste Diversion Strategy was approved (Attachment 1).

To support the development of the ICI Organics Diversion Strategy, Waste & Recycling Services (WRS) conducted extensive engagement with stakeholders (generators, haulers, processors and associations/NGOs) and retained CH2MHILL Canada Ltd. to conduct industry research and assess current organic waste processing capacity. This work indicates that there is stakeholder support and sufficient processing capacity in the Calgary region for the ICI organics bylaw amendments to be accelerated. The Project Summary is included as Attachment 2.

Based on the stakeholder engagement, summarized in Attachment 3, and the consultant's report, the ICI Organics Diversion Strategy recommends specific roles for the City and the private sector. The City will be responsible for the communication, education, facilitation, enforcement and monitoring of the ICI sector and the private sector will be responsible for providing collection, hauling and processing solutions for the organic material. The ICI Organics Diversion Strategy is provided as Attachment 4.

### ADMINISTRATION RECOMMENDATION(S)

That the SPC on Utilities and Corporate Services recommends that Council direct Administration to:

- 1) Implement the ICI Organics Diversion Strategy; and
- 2) Return to Council with amendments to the Waste & Recycling Bylaw (20M2001) no later than Q4 2016 with implementation scheduled for Q4 2017.

### PREVIOUS COUNCIL DIRECTION / POLICY

On 2014 May 12, Council directed Administration (UCS2014-0259) to:

1. Implement the ICI Waste Diversion Strategy, as outlined in Attachment 1;
2. Return to Council with amendments to the Waste & Recycling Bylaw (20M2001) no later than 2015 September; and
3. Return to Council with an ICI Organics Specific Diversion Strategy no later than 2015 September.

### BACKGROUND

The ICI sector contributed the largest amount of waste of all sectors to City of Calgary landfills in 2014 (217,000 tonnes). This waste is mainly comprised of two material categories: paper and cardboard, and organics. The organics portion of this waste stream, 31 per cent or 67,000 tonnes, includes food, recyclable wood and other organics.

## **INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) ORGANICS DIVERSION STRATEGY**

---

In Calgary, ICI waste is generated by over 160,000 organizations and businesses that employ approximately 780,000 people. Based on engagement with private composters, it is estimated that a minimum of 10,000 tonnes (15 per cent of total quantity generated) of organic material is currently diverted from this sector. A number of ICI generators are diverting food scrap waste as well as organic waste from gardens and industrial processes. The generators participating in current organics diversion programs include schools, institutions, grocery stores, bakeries and breweries. The majority of these are serviced by the private sector for the collection and hauling of organic material.

The 2014 ICI Waste Diversion Strategy added paper and cardboard to the Designated Materials List (DML) in Q1 of 2015. The enforcement of the diversion of paper and cardboard will begin in Q1 2016 and a landfill ban is scheduled for Q3 2018.

The next phase of this strategy includes adding ICI organics diversion to the Waste and Recycling Bylaw (20M2001) in Q4 2016, to the DML in Q4 2017 and as a landfill ban in Q4 2019 (Attachment 1). The ICI organics diversion addition to the Waste and Recycling Bylaw was scheduled to come into effect in 2019 to permit time for processing technology advancement. However, with the results from the CH2M report indicating sufficient processing capacity and stakeholders support, the effective date for the Bylaw has been moved to Q4 2017.

### **INVESTIGATION: ALTERNATIVES AND ANALYSIS**

The approved ICI Waste Diversion Strategy included mandatory organics diversion, differential tipping fees and an organics ban. However, adequate private sector capacity for organic material diversion and processing will be required for the strategy to be successful.

The industry research conducted by CH2MHILL evaluated 27 ICI organic waste processing facilities on processing capability and technology, proximity to Calgary, facility risks and compliance records.

The current capacity evaluation for ICI organics diversion and processing in Calgary included a review of redirection/reuse of food waste, food waste disposers, composting and anaerobic digestion, land treatment, and thermal treatment. As well, further analysis was completed with organizations that collect human-edible food for their own use or redistribution and organizations that broker or accept nonhuman edible food for use such as animal feed and organic waste processing facilities. Eleven of the 27 facilities are capable of handling the ICI organic waste generated in Calgary.

Based on this review, the current available capacity of the 11 facilities is estimated to be 150,000 tonnes, significantly more than the estimated 67,000 tonnes of ICI organics being generated in Calgary. This capacity should allow for the haulers, processors, generators and associations to successfully implement an organics diversion program.

The ICI Organics Diversion Strategy was developed using a similar approach to the Multi-Family Recycling Strategy (UCS2014-0026) in that the role of the City is focused on education and communication including the facilitation of food waste prevention and redirection and enforcing

## **INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) ORGANICS DIVERSION STRATEGY**

---

program requirements. The private sector will provide collection, hauling and processing services for organic materials and generators will arrange for on-site source separation of organics.

The City will also maintain a collaborative relationship with the private sector and develop a separate strategy for the monitoring and reporting of ICI waste in Calgary. This partnership between The City and the private sector is the recommended approach to manage, monitor and report on ICI organics diversion in Calgary.

The next steps for The City include:

- Supporting the private sector in the collection and processing of organics.
- Collaborating with the ICI sector to increase waste prevention and food redirection.
- Amending the Waste and Recycling Bylaw (20M2001) to include ICI organics diversion no later than Q4 2016 for program implementation in Q4 2017.
- Revising the Development Standards in the Land Use Bylaw (1P2007) to accommodate ICI organics diversion.
- Developing an education and communication plan with ICI stakeholders.
- Developing a data monitoring and management strategy with the private sector.
- Monitoring and reviewing private sector capacity.

### **Stakeholder Engagement, Research and Communication**

A comprehensive engagement process was undertaken in the development of the ICI Waste Diversion Strategy report from 2012 to 2014. To support the further development of the ICI Organics Diversion Strategy, further engagement with stakeholders (generators, haulers, processors and associations/NGOs) was completed in 2015. This included face-to-face meetings, sessions through the ICI Working Group and the Recycling Council of Alberta, and an open house with industry representatives. Stakeholders supported the development of this strategy.

As part of the CH2MHILL report, key organic generators, processors and haulers in the Calgary area were engaged through interviews and surveys to determine current organics processing, future expansion plans and market stability.

WRS also engaged with many internal business units including Environmental & Safety Management, Animal Bylaw Services, Law and Finance and Supply.

### **Strategic Alignment**

The diversion of organics from the ICI sector is an important step in reducing the amount of waste going to landfills. The landfill tonnage reduction contributes to The City's vision of zero waste. It also aligns with Action Plan 2015 – 2018 Strategic Action H1 - Implement the green cart program and multi-family recycling strategy, and reduce industrial, commercial and institutional waste in our landfills.

## INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) ORGANICS DIVERSION STRATEGY

---

In addition, The City of Calgary has 15,000 employees, and owns and operates a large number of buildings across the city. Environmental & Safety Management is working on the Green Office project, to increase recycling and organic collection opportunities in City facilities. This is in alignment with the ICI Organics Strategy, requiring source separation of organics in the ICI sector, and demonstrates The City's leadership in organics diversion.

### Triple Bottom Line

#### *Social*

The diversion of ICI organics from landfill increases Calgary's diversion rate and fosters community pride and business cooperation. Programs aimed at reducing food waste significantly encourage community involvement and social equality.

#### *Environmental*

The diversion of organics from landfill has the potential to significantly reduce greenhouse gas emissions in Calgary, contributing to cleaner air. Additionally, keeping organics out of the landfills reduces leachate, increasing water quality security. With organics contributing to such a high percentage of the waste stream, diversion programs focused on organics will also extend landfill life.

#### *Economic*

Organics diversion and food waste reduction programs create jobs and provide further business opportunities for Calgarians with the collection, hauling, distribution and processing of the material conducted by the private sector. Furthermore, the diversion of organics significantly extends landfill life and reduces monitoring and management costs, specifically related to landfill gas.

### Financial Capacity

#### **Current and Future Operating Budget:**

Budget requirements for program delivery and implementation including communication, education and enforcement plans will be funded through existing program budgets and ongoing requirements will be evaluated prior to the 2019-2022 Action Plan.

#### **Current and Future Capital Budget:**

The City will monitor and review available private sector processing capacity annually to ensure sufficient capacity is available to process ICI organic material. Should major gaps in the processing capacity be identified, The City will develop contingency plans for potential implementation in the 2019-2022 budget cycle.

### Risk Assessment

Risk assessments were completed for the program implementation and processing components of this strategy. Stakeholders provided feedback on associated risks, including: generation, hauling, processing, operational, market capacity, financial (stakeholders and The City), waste diversion participation and the environment. The strategy incorporates those risks and potential mitigation techniques. Mitigation for these risks is primarily driven with a staged program implementation and ongoing stakeholder engagement.

## **INDUSTRIAL, COMMERCIAL AND INSTITUTIONAL (ICI) ORGANICS DIVERSION STRATEGY**

---

The City will also review private sector collection, hauling and processing activity to confirm materials are being diverted and processed, prior to the landfill ban in 2019. The City should retain the flexibility to pursue other options or contracts in the event the private sector is not fulfilling the market requirements.

### **REASON(S) FOR RECOMMENDATION(S):**

Maximizing the diversion of organics from the industrial, commercial and institutional (ICI) sector will be a major contributor to the achievement of future City diversion goals. The recommendation is based on detailed processing and market scans, extensive stakeholder engagement and options analysis. This strategy provides a timely approach to managing ICI organics by promoting private industry and lessening financial risk for The City. The basis of this strategy is to encourage the future development of private industry while meeting the program implementation timelines.

### **ATTACHMENT(S)**

1. Industrial, Commercial and Institutional (ICI) Waste Diversion Strategy, As Approved 2014 May 12
2. Industrial, Commercial and Institutional Organics Processing Study (CH2MHILL Project Summary)
3. Industrial, Commercial and Institutional (ICI) Waste Diversion Stakeholder Engagement Summary
4. Industrial, Commercial and Institutional (ICI) Organics Diversion Strategy