

A blue-tinted photograph of the Edmonton skyline, featuring several high-rise buildings and a mix of urban architecture.

# Utility Committee

Waste Services Strategic Update and Supporting Reports  
February 1, 2019

Presented by: Gord Cebryk and Michael Labrecque

# Presentation Agenda

1. Citizen Feedback on Additional Residential Waste Diversion Programs - What We Heard in Phase 1 Public Engagement
2. Organics Management
3. Industrial, Commercial and Institutional Sector Strategic Review
4. Zero Waste Target Analysis

# February 1 - Key Milestones/Implications

Milestone	Implications	Key Decision Dates
Approval to advance organics management approach to "Alternative 3B - Demolish existing aeration hall, construct new <b>digestion equipment and facility</b> on existing aeration hall site to generate renewable natural gas (RNG) from biogas"	Tied to proposed set out	P3 assessment step being taken today Q3 - 2019  <b>Final business case on source separated organics set out - June 28, 2019</b>
Proposed set out	120L green cart	
Revisions to grass, leaf and yard waste program	<b>"Top-up" of grass, leaf and yard waste in green carts</b> No grass, leaf and yard waste in black carts Additional seasonal pick up	
Additional programming: - Waste Reduction (single-use plastics, food waste and general strategy) - <b>Zero Waste Goal</b>	Scoping next phase of public input for: - Single unit - Multi-unit - Industrial, commercial and institutional	Waste Reduction Strategy - June 28, 2019

# Strategy Work Plan

## 25-year Strategy Development

### Focus Areas (all sectors):

- Do we have the right technology / processes in place to reach 90 percent diversion?
- Are we having the right conversations with citizens?
- Are customers receiving good value for money?
- Are we working effectively with the private sector?
- Are we maximizing opportunities to recover, reduce and reuse materials from the waste stream?
- Do we have the right governance in place to effectively and transparently manage all components of the system?

Single Unit  
Residential Sector

Multi-Unit  
Residential Sector

Industrial, Commercial  
and Institutional Sector

Internal  
Stakeholders

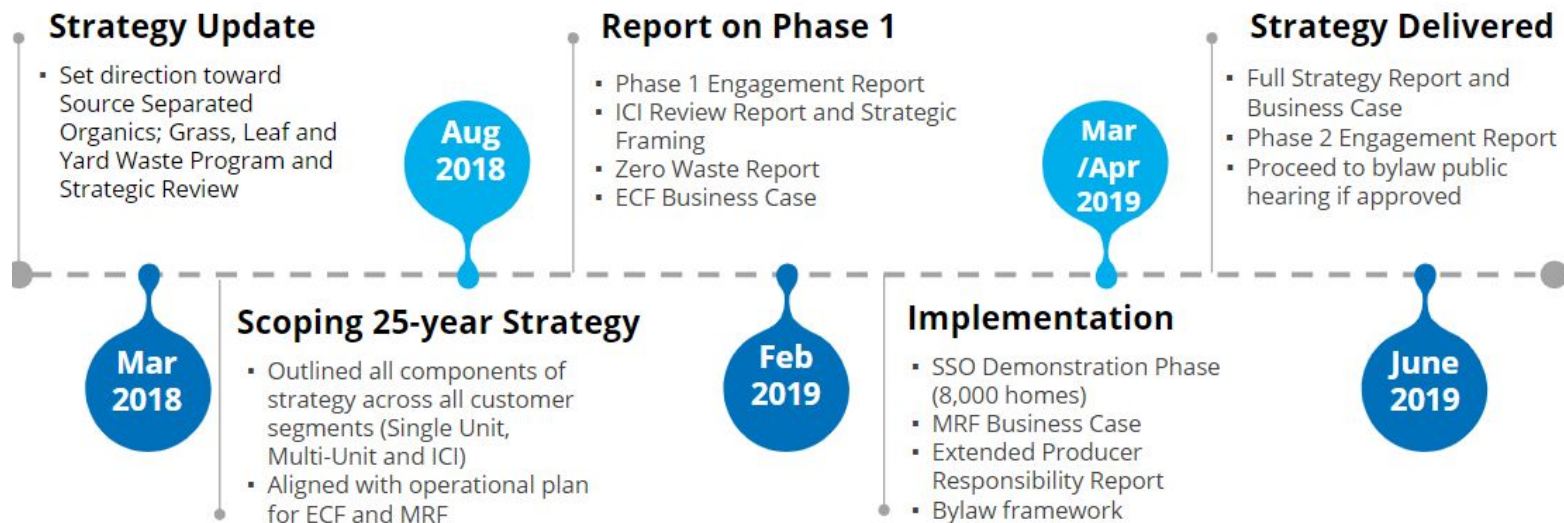
Assessment of opportunities for regional integration

Proposed revisions to all relevant City policies and bylaw

Revised Business Performance Measures (KPIs) / Sustainability Measures (GHGs)

# Strategy Development: Milestones

## 25-Year Strategy: Key Milestones



SSO - Source Separated Organics  
ICI - Industrial, Commercial & Institutional

ECF - Edmonton Composting Facility  
MRF - Materials Recovery Facility

# Engagement Highlights

## Phase 1 - October 1 to November 30, 2018

**Target Audiences:** 4 sectors (residents, multi-unit stakeholders, non-residential stakeholders, internal City employees)

**Tools for Gathering Input:** 3 online public surveys, 3 intercept surveys (English, Cantonese and Mandarin, Punjabi), 2 Edmonton Insight Community surveys, 20 public drop-in sessions, over 13 event and pop-up displays, multiple stakeholder sessions and workshops, phone interviews, in-person meetings and emails

**Communications Tactics:** Print ads (est. reach of 4 million), web pages and online ads (est. reach of 1 million), radio (over 800,000 reached), 3 newsletters (1000+ subscribers), 5 info sheets, handbills and posters

**Outcomes:** 20,000+ participants (survey respondents and session attendees)

- Over 900 respondents and contacts made with non-residential sector
- Over 300 respondents and contacts made with multi-unit stakeholder sector

# Citizen Feedback on Additional Residential Waste Diversion Programs (CR\_5827)

Focus Area	Highlights
1. Do we have the right technology / processes in place to reach 90 percent diversion?	<ul style="list-style-type: none"><li>• Importance of alignment of <b>organics management approach to fit with citizen input</b> on grass, leaf and yard waste and cart preferences</li><li>• Importance of adapting to automated collection</li><li>• Engagement narrowed set-out for the one year demonstration project</li></ul>
2. Are we having the right conversations with citizens?	<ul style="list-style-type: none"><li>• Input from engagement changed design of grass, leaf and yard waste program:<ul style="list-style-type: none"><li>○ <b>Allowance of top-up</b></li><li>○ Additional seasonal collections (to be evaluated through demonstration project)</li></ul></li><li>• Challenges in multi-unit residences for source separation</li></ul>
3. Are customer receiving good value for money?	<ul style="list-style-type: none"><li>• Questions about cost of proposed changes</li><li>• Questions about possibility of a <b>variable rate structure</b> (under evaluation) being able to choose cart size:<ul style="list-style-type: none"><li>○ 240L cart - preference of 44% of respondents</li><li>○ 110L cart - preference of 26% of respondents (120L = actual size)</li></ul></li></ul>

# Citizen Feedback on Additional Residential Waste Diversion Programs (CR\_5827)

Focus Area	Highlights
4. Are we working effectively with the private sector?	<ul style="list-style-type: none"><li>• Summary response outlined in CR_6361 (Industrial, Commercial and Institutional Sector Strategic Review)</li></ul>
5. Are we maximizing opportunities to recover, reduce and reuse materials from the waste stream?	<ul style="list-style-type: none"><li>• Moderate to positive responses on limited engagement on:<ul style="list-style-type: none"><li>◦ Restrictions to single-use plastic items across both residential and industrial, commercial and institutional sector</li><li>◦ City supporting broader programming to reduce food waste across all sectors</li><li>◦ Participating in clothing or household fabric recycling</li><li>◦ Establishing a <b>zero waste goal</b></li></ul></li></ul>
6. Do we have the right governance in place to effectively and transparently manage all components of the system?	<ul style="list-style-type: none"><li>• Additional governance in place through <b>Executive Leadership</b> and Governance committees</li><li>• Broad internal engagement in Phase 1; in phase 2 change management process in place to manage <b>City's leadership as a first mover</b> in non-regulated sector</li><li>• Assessing regional implications and approach</li></ul>

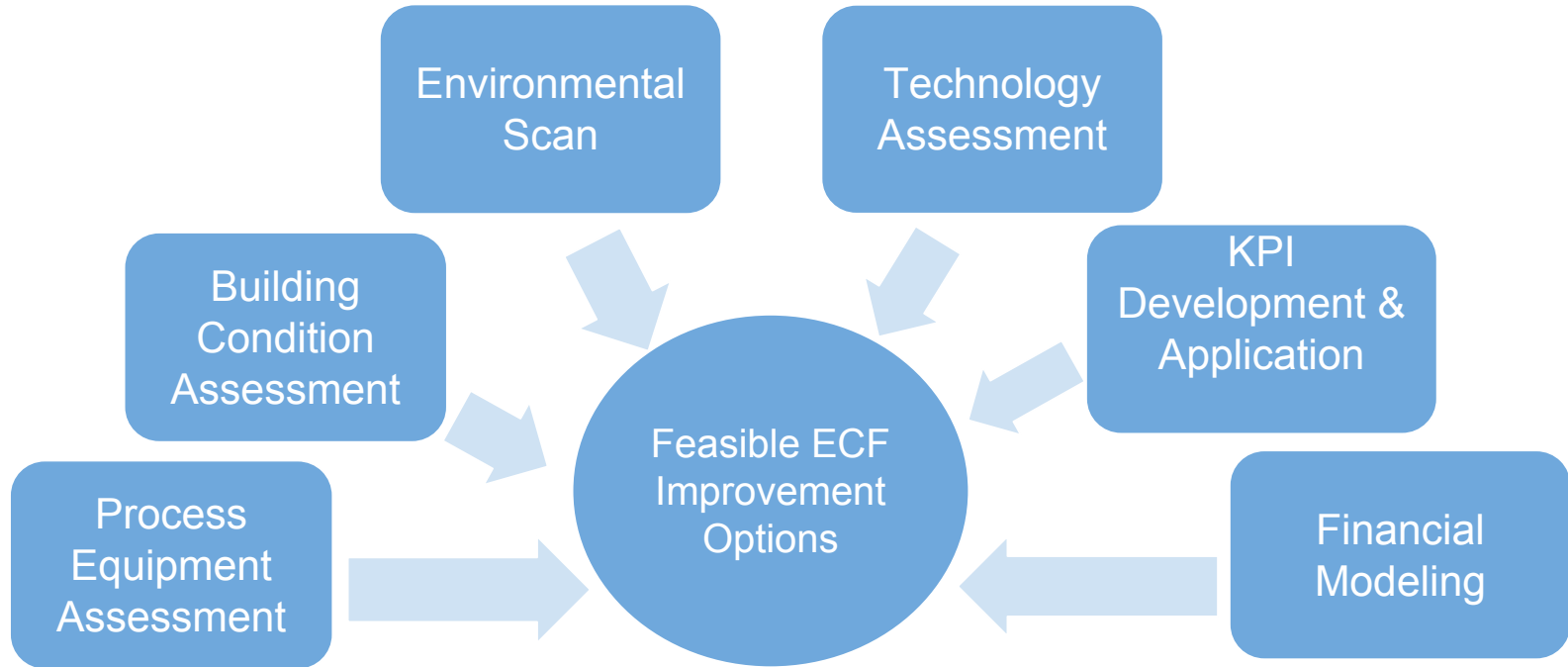
# Citizen Feedback on Additional Residential Waste Diversion Programs (CR\_5827)

Streams		Area 1 4,000 households	Area 2 4,000 households
Recyclables	Collection Method	Unlimited Blue Bags	Unlimited Blue Bags
	Collection Frequency	Weekly year round	Weekly year round
Organics	Collection Method	120 litre cart	120 litre cart
	Collection Frequency	Weekly in the summer Bi-weekly in the winter	Weekly in the summer Bi-weekly in the winter
Garbage	Collection Method	120 litre cart	240 litre cart
	Collection Frequency	Bi-weekly year round	Bi-weekly year round
Seasonal Yard Waste	Collection Method	Kraft bags and bundles	Kraft bags and bundles
	Collection Frequency	Twice in the spring Twice in the fall	Twice in the spring Twice in the fall

# Organics Management (CR\_6669)

- Review the overall short-term and long-term strategy for organics processing at the Edmonton Waste Management Centre
- Determine the capital investment in facilities and equipment that will help the City achieve its diversion goal over the next 30 years
- Determine the best project delivery model, considering capital and operating requirements and trends in municipal waste processing
- Achieve alignment with scoping of waste set out (Source Separated Organics Program)

# Organics Management (CR\_6669)



# Organics Management (CR\_6669)

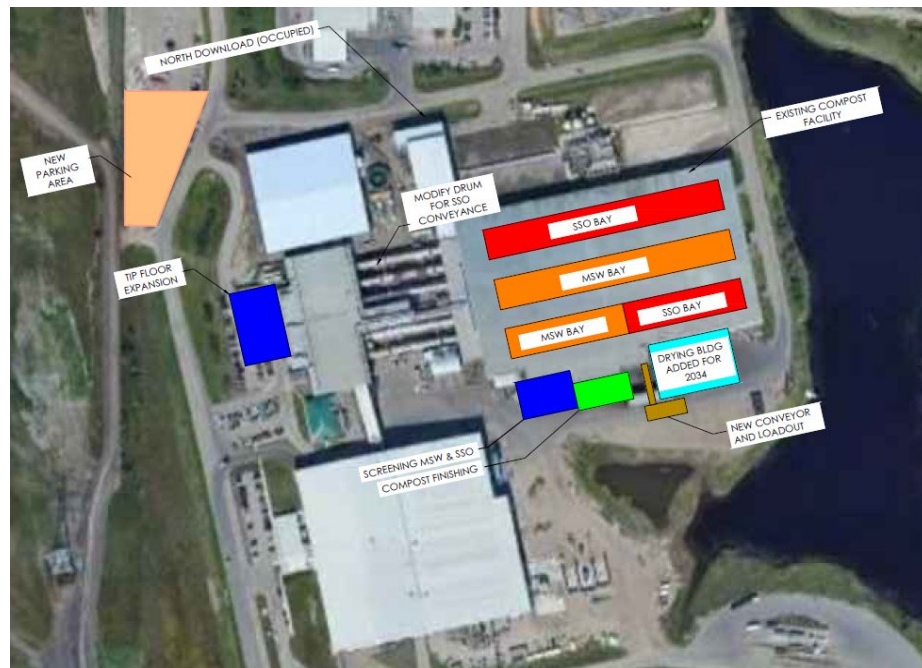
## Capacity

- Current processing requirement = 135,000 tonnes (2016) per year of municipal solid waste (mixed organics and garbage)
- Processing capacity required with source separated organics implementation
  - **2024** = 120,000 tonnes per year; **2044** = 180,000 tonnes per year
- Top-up of green carts affects processing capacity, requires a larger facility to handle the peak material flow
  - Additional 20,000 tonnes over five months in summer
- Increased facility size would add between 20% and 30% to the capital cost

# Organics Management (CR\_6669)

## ECF Alternative 1 - Composting (Aerobic)

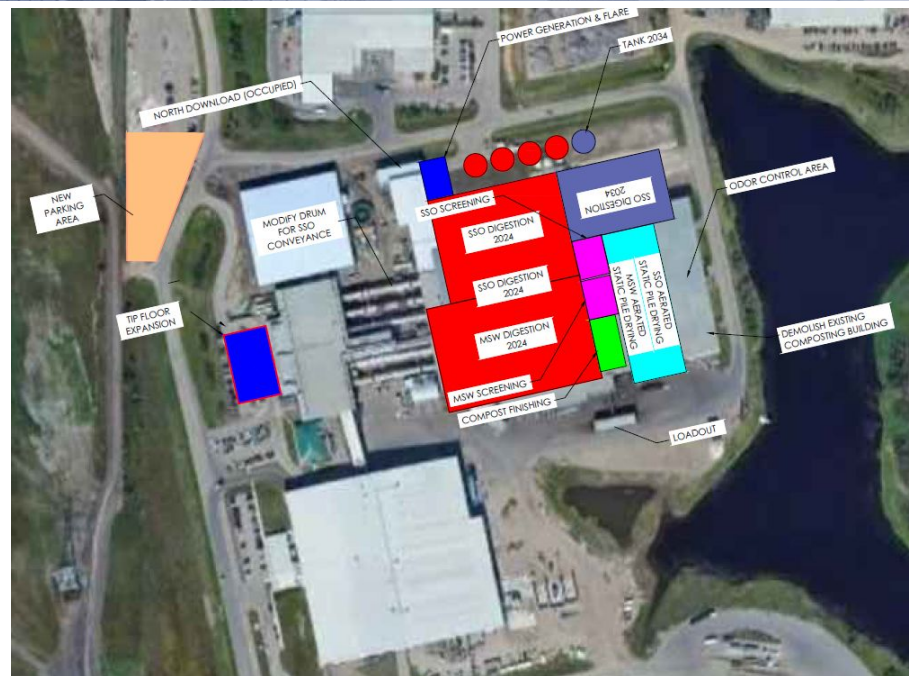
- Repairing roof of the Aeration Hall
- Tip floor expansion
- Improvements to the finish circuit, equipment to remove contaminants (glass, plastic, etc.) to improve compost quality
- Requires replacement of existing equipment in 2029



# Organics Management (CR\_6669)

## ECF Alternative 3B - Digestion (Anaerobic)

- Demolition of existing Edmonton Composting Facility aeration hall
- Construction of new anaerobic digesters
- Improvements to the finish circuit to improve product quality
- Capture of biogas from digestion and conversion into Renewable Natural Gas (RNG)
- Requires expansion in 2034



# Organics Management (CR\_6669)

- **ECF Alternative 2** - Demolition of the existing Edmonton Composting Facility aeration hall and replacement with new composting facility
  - For composting, repair of the existing structure has the best net present value (smaller rate requirement)
- **ECF Alternative 3A** - Anaerobic digestion with conversion of biogas into electricity
  - For digestion, renewable natural gas offers better return on investment



# Organics Management (CR\_6669)

## Decision Framework

Decision Criteria	Weight	Composting - Repair	Composting - New	Digestion
		Alternative 1	Alternative 2	Alternative 3
Environmental	20%	11	12	20
NPV	25%	20	16	25
Capital Cost	30%	30	24	24
Risks	15%	11	12	12
Accomodation	10%	5	6	6
Total	100%	77	70	87

# Organics Management (CR\_6669)

- **Recommendation:** That the new organic waste management approach based on Alternative 3B, as outlined in City Operations report CR\_6669, be approved.
  - Supported by the Energy Transition Advisory Committee
- Aligned with 2050 Vision
  - **Regional Prosperity** through innovation and relevance for our businesses at the local and global level
  - **Climate Resilience** through most sustainable processing of organic waste
- Request to Utility Committee for approval of project initiation and planning (to PPDM Checkpoint 2) - fund expected to be expended ≈ \$2M
- Next step is completion of assessment for Public Private Partnership per Policy C555 - the results of assessment to be presented to Utility Committee in Q3 2019

# Industrial, Commercial and Institutional Sector Strategic Review - Update (CR\_6361)

## **Directional considerations emerging from broader engagement**

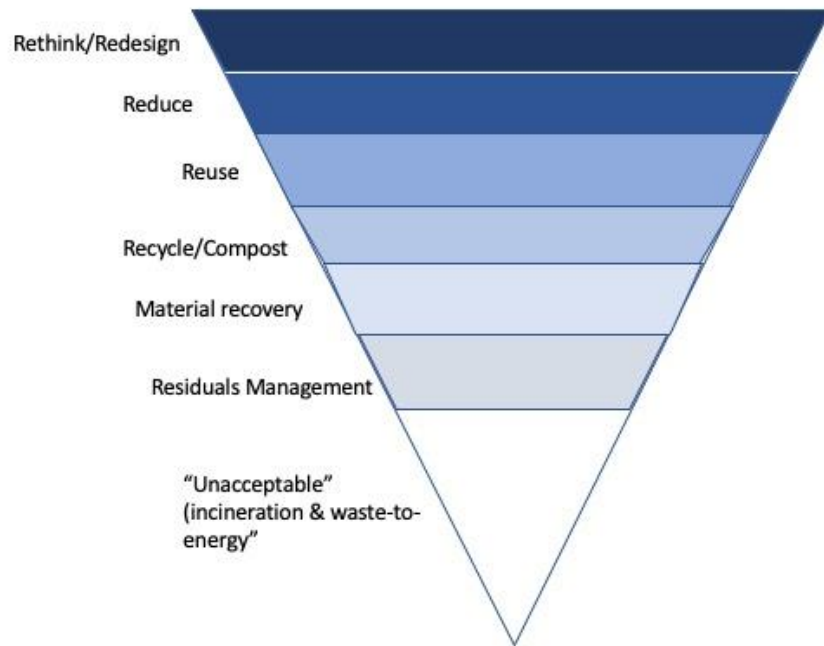
1. There is moderate to positive support for moving towards greater source separation of waste within industrial, commercial and institutional sector organizations.
2. City must be more consistent in advancing positive, educational messages about managing waste and it needs to have a clearer sense of its own role.
3. City is not doing enough to impact change through education or regulation.
4. There is support for more initiatives to reduce waste production through regulation and some frustration with lack of movement on Extended Producer Responsibility among some organizations.
5. City must lead by example.
6. City should work with industry representatives to set diversion targets and methodology.
7. There is a desire to advance changes regionally.

# Zero Waste Target Analysis (CR\_6132)

## Recommendation

1. That Phase 2 engagement be conducted to further articulate and inform a Zero Waste framework as an overarching strategic goal for Waste Services.
2. That a final analysis and recommendation for a Zero Waste framework be included as part of the 25-year Strategy Report to Utility Committee in June 2019.

# Zero Waste Target Analysis (CR\_6132)



Source: zerowastecanada.ca (2018)

## Positioning Supports

- Increased focus on activities of the waste hierarchy (rethink/redesign, reduce, reuse)
- Greater emphasis on circular economy innovations
- More broad-based focus on measurements beyond diversion
- Emphasizes continuous improvement

A blue-tinted photograph of the Edmonton skyline, featuring several high-rise buildings and a dense urban landscape.

Thank you.

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Discussion / Questions