# Greater Sudbury Sustainable Waste Strategy

## Phase 3: How to Achieve Goals

October 16, 2023

# Purpose

1. Provide a brief recap of the Sustainable Waste Strategy
2. Provide an overview of the current phase (i.e., Phase 3 “How to Achieve Goals”)
3. Discuss options under consideration
4. Review upcoming engagement and next steps

# Project Overview

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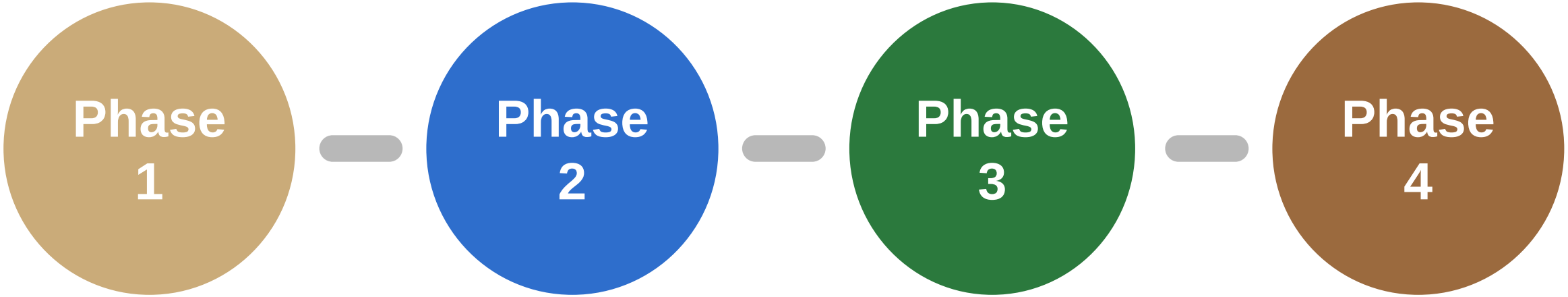



**Assess Current State**

Understand the current system and the context in which it operates

**Mid 2022 - Early 2023**

**Envision Future State**

Establish guiding principles and vision for the future state

**Early 2023 - Mid 2023**

**Determine How**

Identify options to achieve goals and evaluate future options

**Mid 2023 - Early 2024**

**Develop Sustainable Waste Strategy**

Consolidate and summarize findings into a 10-year plan (2025-2035)

**Early 2024 - Mid 2024**

# Vision Statement Illustration

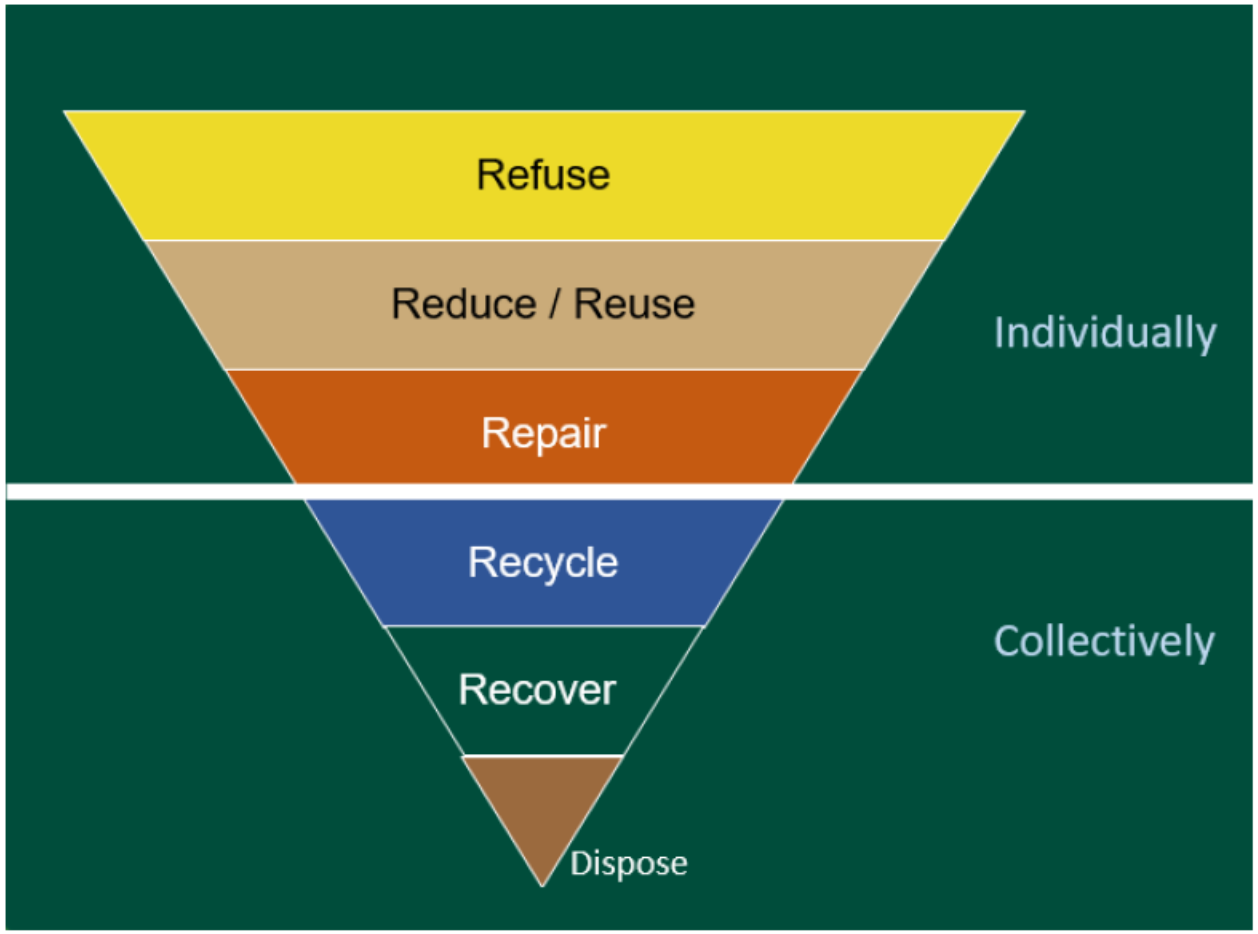
# Guiding Principles

These help the City implement the vision and help with decision making in the 10-year timeframe

| #1 | #2 | #3 | #4 | #5 | #6 |
|---|---|---|---|---|---|
| Apply the waste hierarchy. | Prolong the life of the City's landfills. | Improve and/or augment programs and agreements that benefit the City financially and evaluate their contribution. | Promote responsible behaviour through the provision of promotion and education, and by making diversion programs accessible, convenient and appropriate for a northern Ontario community and Greater Sudbury's cultural diversity. | Advance Individual Producer Responsibility (IPR) programs and make appropriate decisions that reflect the evolution of IPR programs. | Where viable markets or technologies are available, research the potential for diversion to balance environmental and financial priorities. |

# Waste Hierarchy

Greater Sudbury will establish goals and targets aligned with the waste hierarchy

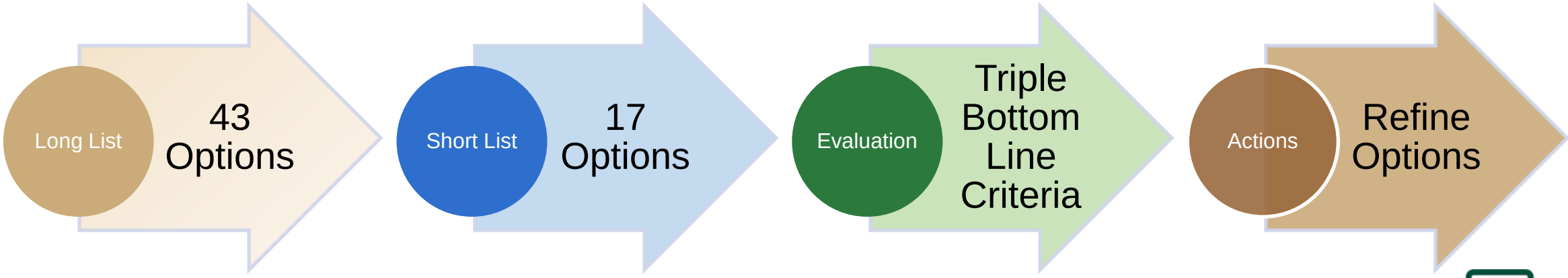



**Refuse:** To make choices that prevent the generation of waste.
**Reduce/Reuse:** To lessen the generation of waste by reducing and reusing products or materials.
**Repair:** To make materials last longer, which could include fixing pieces, replacing parts, remanufacturing, refurbishing.

**Recycle**: To collect, sort and sell materials to secondary markets so that they will be incorporated into new products or packaging.
**Recover:** To collect, treat and use materials from nature, such as using leaf and yard trimmings for regenerative purposes and recovering energy from landfill gas.
**Dispose**: To landfill or incinerate materials without opportunity for them to be repurposed.

# Phase 3: How to Achieve Goals

# Options Development Process

# Internal Engagement – Round 1

- **Purpose**: to present the short list of options and Phase 3 engagement plan prior to conducting engagement activities.

  - *Growth and Infrastructure Leadership Meeting – September 13*
  - *Solid Waste Advisory Panel (SWAP) – September 20*
  - *ELT – October 5*
  - Operations Committee – October 16

# Public Engagement

| **Phase 3** Survey | **Phase 3** Open Houses | **Phase 3** Community Workshops | **Phase 4** Survey |
|---|---|---|---|
| • Online survey | • Interactive events for public audience | • Focused dialogue with community groups | • Online survey |
| **October 18 to November 7, 2023** | | | **Spring 2024** |

# Public Engagement

| | Saturday, October 21 | Sunday, October 22 | Monday, October 23 | Tuesday, October 24 |
|---|---|---|---|---|
| **Open Houses** | • **Downtown** – Mall, Market Square; 9 am to 2 pm<br>• **Coniston** – Toe Blake Arena; 3:30 to 7:30 pm | • **Hanmer** – Howard Armstrong Recreation Centre; 9 am to 1 pm<br>• **Chelmsford** – Chelmsford Arena; 3:30 to 7:30 pm | • **Lively** – Public Library and Citizen Services Centre; 2 to 4 pm and 6 to 8 pm | |
| **Community Workshops**<br><br>(2 hours @ Education Centre) | | | • **Indigenous Communities and Organizations**; 10 am to 12 pm | • **Industry & Institutions**; 10 am to 12 pm<br>• **Environmental groups**; 2 to 4 pm<br>• **Residents** (CANs, HDR, Public); 6 to 8 pm |

# Evaluation Criteria - Environmental

| Question | Indicator | Rank | Guiding Principle |
|---|---|---|---|
| Does the option reduce carbon emissions and pollution in the City and work towards achieving net-zero emissions by 2050? | Climate Change Impacts (kg CO2eq) | 1. Will result in little to no impact on carbon emissions and pollution.<br>2. Will result in moderate reductions to carbon emissions and pollution.<br>3. Significant reductions to carbon emissions and pollution. | #6. Where viable markets or technologies are available, research the potential for diversion to balance environmental and financial priorities |
| Does the option extend the life of the landfills and prioritize policies and programs that maximize reduction and diversion? | Landfill Space Preservation (m3) | 1. Results in little to no impact on current waste infrastructure assets<br>2. Moderate changes to increase lifespan of current waste infrastructure assets<br>3. Significantly increases the lifespan of existing assets | #1. Prolong the life of the City's landfills.<br>#2. Apply the waste hierarchy. |

# Evaluation Criteria – Social

| Question | Indicator | Rank | Guiding Principle |
|---|---|---|---|
| Does the option make diversion programs accessible, safe and convenient? | Accessibility and convenience | 1. Reduces accessibility and convenience<br>2. Has no impact on accessibility and convenience<br>3. Increases accessibility and convenience | #4. Promote responsible behaviour through the provision of P&E, and by making diversion programs accessible, convenient and appropriate for a Northern Ontario community and Greater Sudbury's cultural diversity. |
| Does the option support collaboration with other municipalities, local businesses, First Nation communities, environmental organizations, etc.? | Collaboration | 1. Option poses reputational risks or other hindrance to collaborating with partners<br>2. Option is neutral<br>3. Option provides opportunities for strategic objectives to be met by leveraging resources through partnerships | # 4. Promote responsible behaviour through the provision of P&E, and by making diversion programs accessible, convenient and appropriate for a Northern Ontario community and Greater Sudbury's cultural diversity. |

# Evaluation Criteria – Economic

| Question | Indicator | Rank | Guiding Principle |
|---|---|---|---|
| What does the option cost the City in terms of capital and annual operating costs? | Cost to the City ($) | 1. $500,000 or greater capital or annual costs<br>2. $500,000 to <$250,000 capital or annual costs<br>3. $250,000 or less capital or annual costs | #6. Where viable markets or technologies are available, research the potential for diversion to balance environmental and financial priorities |
| What are the potential risks with this option? | Risk Level (qualitative description) | 1. Very high risk (e.g. results, liability, environmental impacts, control by City)<br>2. Moderate risk (e.g. some risks but they can be mitigated)<br>3. Very low risk (e.g. good results, good for the environment, limited liability) | #5. Advance IPR programs and make appropriate decisions that reflect the evolution of IPR programs.<br>#6. Where viable markets or technologies are available, research the potential for diversion to balance environmental and financial priorities |

# Internal Engagement – Round 2

- **Purpose**: To share what was heard through engagement activities and provide evaluation results on the short list of options.
  - TAC, SWAP, ELT and OC in early 2024

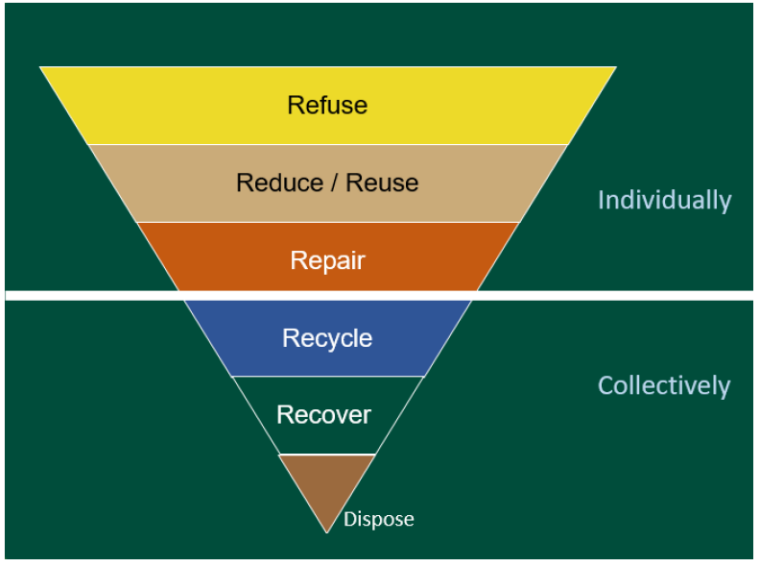
# Proposed Options

**Reduce / Reuse / Repair**

- Create local circular economy opportunities and markets

**Recycle**

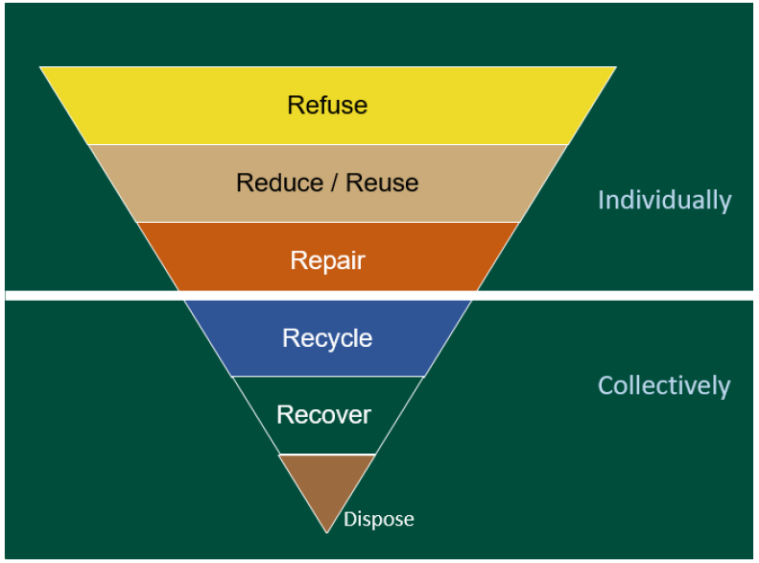
- Recovery of waste management costs
- Clear garbage bag program
- Enhance roadside collection
- Bulky waste collection program review
- Preferred future collection system
- Enhance diversion at municipal facilities
- Conduct waste composition studies
- Enhance customer service delivery through technology



# Proposed Options

## Recover

- Review leaf and yard trimming collection program
- Organic waste processing and funding
- Increase organics collection from non-residential sector
- Increase organics collection from apartment buildings




## Dispose

- Pilot separate dog waste collection
- Litter and illegal dumping strategy
- Landfill operations enhancements
- Reduce greenhouse gas emissions at landfills

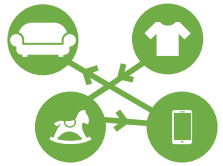
# Next Steps

1. Complete options evaluation
2. Launch Phase 3 engagement plan
3. Prepare Phase 3 report
4. Report back in early 2024

# Thank You

overtoyou.greatersudbury.ca/wastestrategy

# Create local circular economy opportunities and markets



**Description**

The City will hold a series of workshops for internal City departments, local small businesses and representatives from key economic sectors (i.e., mining, academia), non-governmental organizations and local institutions to brainstorm ways to create local circular opportunities, provide support to local innovators and organizations and how to attract more businesses to establish markets for materials currently wasted.

**Rationale/Sudbury Experience**

- City initiatives that work towards a circular economy include its Reuse Store (situated at the Sudbury Landfill) and its partnership with Vale to use leaf and yard trimmings for reclamation purposes.

**Assumptions**

- Environmental Services will identify potential participants, leverage participation to build interest in circular economy initiatives and communicate circular economy objectives.
- A minimum of two workshops will be held annually.
- A result of the workshop would be to encourage the exchange of materials from business to business.
- Internal staff will develop and implement the workshops.
- Potential for partnership on organics processing option.

# Recovery of waste management costs

**Description**

A study will be undertaken to determine ways to recover costs, increase diversion and save valuable landfill space. The analysis will consider a partial user pay system for roadside collection of some waste streams (i.e., garbage, bulky waste), implementation of flat rate landfill fees (referred to as a 'gate fee'), whether the Residential Tipping Fee Holiday should be reduced or eliminated and consideration of fees for future organics collection and processing for non-residential and HDR locations.

**Rationale/Sudbury Experience**

- Residents and commercial customers can drop off 50 kg per week with paying a tipping fee.
- After 50 kg, there is a tipping fee of $3.50 for residential loads weighing 100 kg or less, then $10 per 100 kg. Loads over one tonne are $100 per tonne.
- Two weeks per year, the City provides residents with a "Residential Tipping Fee Holiday."
- Landfill tipping fees provide the largest revenue to the City.
- Implementation would increase diversion in line with CEEP targets.

**Assumptions**

- Findings from the User Fee Review will be incorporated.
- User fee system would consider all costs, including staff time required for service delivery and includes indirect costs such as HR and Finance which is crucial for service delivery.
- A consultant would be hired to do the review.

# Clear Garbage Bag program

**Description**

The City will implement a Clear Garbage Bag program for both residential and non-residential customers at the roadside and at landfill sites as a cost efficient way to increase waste diversion. Residents will initially be provided with information on where to purchase clear bags for garbage and data will be gathered to assess the impact of the program. Promotion and education along with enforcement will be required initially.

**Rationale/Sudbury Experience**

- Clear garbage bags incentivize participation in diversion programs which contribute to CEEP goals.
- The City provides waste collection to approximately 63,000 households and 350 high density residential properties.
- The City's collection contract expires in 2028 with a possibility of a 1-year extension.
- Clear bag garbage programs are considered a best practice and it has been implemented in Kawartha Lakes, Peterbourgh County and Cities of Peterborough and Markham.

**Assumptions**

- Customers will be permitted to use a small opaque privacy bag within each clear bag.
- Staff time is included in the development of promotion and education campaign and will require additional resources for a detailed City-wide campaign.
- Additional effort for field education and enforcement will be required.
- Program implementation will be done alongside increased enforcement, including by collection staff.
- Thresholds will need to be established for divertable content observed in clear bags before refusing collection.

# Enhance waste diversion at municipal facilities

**Description**

The City will lead by example and enhance waste diversion program at municipal facilities. A guideline will be developed, consistent containers will be purchased for indoor and outdoor use and a database of participating facilities will be maintained.

**Rationale/Sudbury Experience**

- Providing diversion at municipal facilities is a way in which the City can lead by example.
- Some municipal facilities have the opportunity to receive recycling services from the City.
- There is inconsistency in container types and participation levels.
- This option would fill the existing gaps by creating a consistent program aligned with best practices.

**Assumptions**

- City staff will develop a promotion and education materials including signage.
- Additional waste containers or aesthetic enhancements of existing waste containers will be required.
- The City will review of vendor contracts and rental agreements to ensure any third party adheres to the waste diversion standards.
- A listing of facilities and implementation status will be maintained by the City.
- Potential to include progress in annual report card in conjunction with other City departments.

# Enhance roadside collection

**Description**

The City will provide a collection program for targeted materials, including textiles and batteries. Partnerships with battery producer responsibility organization and non-profit organizations for textiles collection will be explored.

**Rationale/Sudbury Experience**

- Based on residential waste composition studies, textiles represents approximately 5-7% of the garbage stream. Diverting this stream can extend the life of the landfill and contribute to CEEP goals.
- Batteries, although low in weight, are a hazardous waste that is still found in the garbage stream and landfilled. Audit data states that 0.06% of the garbage stream consists of batteries.

**Assumptions**

- City would provide small plastic bags for batteries to be collected once or twice a year.
- City will work with producers for batteries and receive some funding for the program.
- City will partner with textile diversion organizations to confirm collection approach with preference to local non-profit organizations.
- City will carry out promotion and education to inform residents about both programs.

# Preferred future collection system

**Description**

The City will review how it will provide collection services in time for the new collection contract and how to finance the future collection system under a full user pay model. The review will take into account the upcoming transition of the Blue Box program from the City to producers and the desire to shift to automated collection with a fleet that has reduced emissions based on the latest industry trends.

**Rationale/Sudbury Experience**

- The City's collection contract expires in 2028 with a possibility of a 1-year extension.
- Reducing emissions from collection aligns with CEEP goals.
- Automated collection will require the City to move to a cart-based collection program.
- Automated collection of waste carts is becoming the industry norm given health and safety concerns of collection operators.

**Assumptions**

- An independent review would be conducted that will review fleet type (e.g., electric vehicles, fuel type), costs for transitioning to a cart-based program and other changes required by the City.
- An independent review would be conducted to establish a sustainable financial model to support moving towards a full user pay system.

# Conduct waste quantity and composition studies

**Description**

The City will conduct back end (i.e., disposal or processing facility) waste audits to measure the performance of programs before and after its Blue Box transition date (April 1, 2025).

**Rationale/Sudbury Experience**

- There is limited City data on the composition of waste managed through the different collection and depot programs.
- The City may be able to identify other materials for potential diversion based on audit findings, which would contribute to CEEP goals.
- The audit studies will inform the City of its waste composition pre- and post-transition to IPR Blue Box collection system. The audit data will support the City in taking an advocacy role, for example, if there is an increase in Green Cart contamination, recycling in garbage, or other quantity/composition issues post-transition.

**Assumptions**

- One audit of the garbage stream will take place prior to the producer responsibility Blue Box transition to set a baseline.
- Annual audits will take place to understand program changes and allow for a consistent metric for data management.
- A consultant will be retained to complete the waste audits.
- City of Greater Sudbury staff will be responsible for data management following the completion of any study and incorporation into P&E messaging, as required.

# Enhance customer service delivery through technology

**Description**

The City will update collection and routing technology to support customer service delivery. This option is intended to help with timely, efficient and reliable resolution of customer service inquiries, potential improvements to collection routing, access to improved data for monitoring and reporting purposes and increased safety. It supports the City's strategic objective of improving its relationship with citizens.

**Rationale/Sudbury Experience**

- Reducing emissions from collection aligns with CEEP goals.
- The City current uses an outdated collection routing and vehicle locating system that is limited in its applications and includes certain features that are no longer supported.

**Assumptions**

- Technologies explored will include routing software programs that are currently used in Canada.

# Review leaf and yard trimming collection program

**Description**

To optimize the program, the City will remove grass clippings as an acceptable item in the leaf and yard trimming collection program. In the future, the City may consider adjusting the number of collections on an annual basis.

**Rationale/Sudbury Experience**

- Grass clippings are beneficial for lawns and reducing the quantity of grass collected helps the City handle lower quantities
- Approximately 61% of the compostable materials collected by the City are leaf and yard trimmings (approx. 8,000 tonnes per year)
- Leaf & yard trimming collection occurs year around on a bi-weekly basis
- Residents can currently set out unlimited quantities
- Acceptable materials include leaves, twigs and branches, grass clippings, house and garden plants, natural Christmas trees
- Trimmings can be placed in compostable paper bags, bundles or labelled reusable containers with each not exceeding 18 kg in weight

**Assumptions**

- Promotion and education campaign is required.
- Enforcement at the roadside will be required.
- Thresholds for maximum grass clipping content will be established.

# Organic waste processing and funding

**Description**

A study will be undertaken to review options for organics processing. The study will include a review of indoor and outdoor aerobic composting technologies, potential partnerships, export to other facilities, estimates on potential organic waste generation rates and provide recommendations on a preferred alternative(s). The study will include a comparison to the implementation of an anaerobic digester facility and the status quo. Opportunities to receive funding from different levels of government will also be researched.

**Rationale/Sudbury Experience**

- The City is not accepting new applications from the non-residential sector to join the organics collection program and is unable to meet the targets in the province's Food and Organic Waste Policy Statement due to insufficient processing capacity. Currently no HDRs are participating.
- Organic waste is taken to the Organic Composting Area at the Sudbury Landfill and Waste Diversion Site. Within this site, the City is permitted and licensed to use the aerobic windrow method to process the material.
- A feasibility study considering the implementation of an anaerobic digester facility is currently underway.
- Increasing diversion of organics would contribute the City's CEEP goals.

**Assumptions**

- The existing facility is limited on expansion area.
- There is City owned land that could be used to develop a new facility.
- An independent study will be undertaken that will document various factors of the different technology types.
- The City will have waste composition data to support generation rates.

# Increase organics collection from non-residential sector

**Description**

Once the City has secured increased organics processing capacity, the organics collection program to the non-residential sector will be expanded. Planning will include potential adjustments to user fees, implementation of a by-law to increase participation and require participation from new developments and/or compliance and outreach to new customers to inform of the program.

**Rationale/Sudbury Experience**

- The City currently provides a Yellow Cart program on a limited basis for organics collection from small non-residential customers on residential routes.
- Up to three yellow carts can be set at the roadside weekly and non-residential customers are required to pay a user fee of $106 per year.
- The City needs to increase organics diversion to meet its targets from CEEP and the province's Food and Organic Waste Policy Statement.

**Assumptions**

- This option will be implemented once the City has increased its organic waste processing capacity.
- The program would operate independently of the yellow cart program and collection would be done privately.
- The City will accept organic waste for processing and any fee will consider the findings from the User Fee Review.
- Promotion and education materials will be developed for non-residential customers.

# Increase organics collection from high density residential buildings

**Description**

Once the City has secured increased organics processing capacity, the organics collection to the high density residential (HDR) sector will be expanded. To expand its customer base and increase diversion, the City would review building standards and existing fees and develop a process for HDR properties to receive organics collection services. The City would also require new developments to participate in the program through their approval process. Planning will include potential adjustments to user fees.

**Rationale/Sudbury Experience**

- HDR customers that are on a roadside collection system have been able to participate in the Green Cart Program since 2010. Since 2018, high density residential property owners using front end and cart-based collection have been able to enroll in the program on a cost recovery basis.
- In 2021 the City serviced 354 high density residential properties with 12,336 residential units.
- The City needs to increase organics diversion to meet its targets from CEEP and the province's Food and Organic Waste Policy Statement.

**Assumptions**

- This option will be implemented once the City has increased its organic waste processing capacity.
- Promotion and education materials will be developed for HDR customers.
- Additional kitchen catcher containers will be provided to buildings and units, respectively.
- Buildings using a private collection service could also receive processing.
- The findings from the User Fee Review will be considered with respect to collection and processing.

# Bulky collection program service review

**Description**

The City will conduct a service review of its bulky waste collection program. The review will include an assessment of the current service standard including an assessment of the cost to the City. Options to review include consideration of user fees, adjusting collection approach to be within specific days and/or times of the year.

**Rationale/Sudbury Experience**

- Residents on single family residential collection routes can make a pick-up request on the Waste Wise app, online tool or call 311 to request the collection of large furniture, mattresses and appliances.
- Currently, the City provides a 2-day service standard.

**Assumptions**

- An independent review will be undertaken.
- The findings from the User Fee Review will be incorporated into the current service standard assessment.
- Options for service delivery methods can be included in the next collection contract to assess financial impacts.

# Pilot separate dog waste collection

**Description**

The City will pilot a dog waste collection program that provides a separate receptacle by roadside litter containers. Pending to the success of the pilot, the City's Parks Department might want to consider a similar program.

**Rationale/Sudbury Experience**

- Environmental Services manages litter through provision of roadside litter containers and collection services. Dog waste is not permitted in litter containers.
- The pilot will inform the City of the potential to enhance its existing litter collection programs by keeping dog waste out of the garbage and recycling.
- Environmental Services is not responsible for non-roadside litter containers at parks, beaches and trails.

**Assumptions**

- Pilot would involve installing dog waste receptacles next to up to five roadside litter containers.
- Up to five in-ground receptacles will be installed.
- Two audits will be carried out at each container – one prior to and one after the pilot program has been in implementation.
- Signage will be placed near the receptacles to educate dog owners on their use.
- The City would need to determine how to treat the collected waste, which could likely be provided through a contractor.

# Litter and illegal dumping strategy

**Description**

The City will develop a strategy to address litter and illegal dumping. The strategy will review the City's current state of litter and dumping, identify the City's current management approach (including a review of activities across departments), consult with necessary interested parties on opportunities for improvement and provide recommendations.

**Rationale/Sudbury Experience**

- The City manages litter through the provision of roadside litter containers and collection services, and through litter abatement programs.
- Current litter related infrastructure and activities include:
- Litter Containers, including twice a week collection in downtown Sudbury and weekly elsewhere at the roadside.
- Non-containerized litter, including manual and automated litter collection.
- Clean-up Greater Sudbury volunteer programs, including one-time and annual events and adoption programs.

**Assumptions**

- An independent study is undertaken.

# Landfill operations enhancements

**Description**

The City will finalize the design for traffic flow at the three sites. The focus will be to review existing traffic control measures and confirm the preferred approach for improving traffic flow, reducing wait times and idling and increasing the overall efficiency at its landfill and waste diversion sites. Enhancements may include separating commercial and residential vehicles, creating a bypass lane, implement one-way traffic, change bin layout. Another component of this option will be the purchase of equipment to measure and monitor compaction at the landfills and modernized scale software.

**Rationale/Sudbury Experience**

- The City owns three landfill sites and contracts out the operations to a private company.
- A study was completed regarding traffic flow with preliminary design drawings.
- The City is seeking ways to increase operational efficiencies and reduce wait times at landfill and diversion sites.
- The City's three landfill and waste diversion sites each have separate areas for the public to drop off materials for reuse and recycling.

**Assumptions**

- The scope of this option includes traffic flow enhancements at all three sites with an end produce of a conceptual design layout for each site.
- Design will build on preliminary study previously completed.
- The City will purchase three compaction monitors and modernized scale software.

# Reduce greenhouse gas emissions at landfills

**Description**

A pilot project will be undertaken at a closed landfill site or on a closed landfill cell to test the effectiveness of a passive biosystem to reduce landfill methane emissions and contribute to CEEP goals.

**Rationale/Sudbury Experience**

- The Sudbury Landfill has an active landfill gas collection system given the regulatory requirement due to its size.
- The Hanmer and Azilda Landfills are smaller active landfills that do not have active gas collection systems.
- The City manages post-closure care for three closed landfill sites.

**Assumptions**

- The City would pilot a biofilter system at one landfill to assess offset in methane emissions.
- Location selected would need to be a closed landfill or a closed area of an active landfill with final cover placed.
- A consultant(s) would be hired to support construction and/or monitoring for a year.
- An amendment to the Environmental Compliance Approval may be required.
- Emission reductions will be measured and reported as part of CEEP actions.