

Sustainable Waste Strategy How to Achieve Goals

February 9, 2024

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Appendix A: Sudbury Options

Abbreviations

AMO	Association of Municipalities of Ontario
CEEP	Community Energy and Emissions Plan
City or Greater Sudbury	City of Greater Sudbury
EAA	Environmental Assessment Act
ECCC	Environment and Climate Change Canada's
ELT	Executive Leadership Team
G&I	Growth and Infrastructure
GHG	Greenhouse gas
HDR	High density residential
HHW	Household hazardous waste
IC&I	Industrial, commercial and institutional
IPR	Individual Producer Responsibility
IWMS	Integrated Waste Management System
kg CO ₂ eq	kilogram of carbon dioxide equivalent
LDR	Low density residential
MBNCan	Municipal Benchmarking Network of Canada
MECP	Ministry of Environmental, Conservation and Parks
OC	Operations Committee
P&E	Promotion and education
RPRA	Resource Productivity and Recovery Authority
RPWCO	Regional Public Works Commissioners of Ontario
SWAP	Solid Waste Advisory Panel
SWMMP	Solid Waste Management Master Plan (referred to as SWS, see next abbreviation)
SWS	Sustainable Waste Management Strategy
TAC	Technical Advisory Committee
Watson	Watson & Associates Economists Ltd.

1 Introduction

The City of Greater Sudbury's (City's) Sustainable Waste Strategy (SWS) is being updated to support the City in its continuing to develop a sustainable waste management system that minimizes the quantity of waste requiring handling and disposal by maximizing waste diversion opportunities.

The SWS will guide the City in achieving its waste management planning goals over a 10-year horizon while providing quality services that meet the needs of its citizens and businesses. It is anticipated that the recommended options will provide service delivery enhancements, operational improvements and opportunities for new programs and initiatives. The SWS has been prepared in four phases:

- Phase 1 – Documents the current state of the City's integrated waste management system (IWMS) and the context in which it operates (completed);
- Phase 2 – Develops a vision for the future state of the IWMS (completed);
- Phase 3 – Develops and evaluates options to achieve the City's desired future waste management vision (current phase); and
- Phase 4 – Consolidates and summarizes findings into a 10-year plan for how the SWS may be implemented over the next 10 years.

Further detail about the tasks in each phase is provided below.

Phase 1 involved documenting the current state of the City's IWMS including its regulatory context, best practices in other jurisdictions and initial engagement and consultation activities. It also identified the current system's strengths and weaknesses, as well as areas where change is at play and where new opportunities may emerge. Understanding the current state of the City's waste management system was a foundational task necessary to complete the next phases.

Phase 2 explored the desired future state of the IWMS and developed a vision statement, guiding principles and system-wide performance metrics that align with the



City's Strategic Plan. It also provided a summary of the current operational and capital distribution of funds. Importantly, Phase 2 prepared the groundwork for Phase 3 by providing a triple bottom line evaluation methodology and criteria that will be applied to the short-listed options. As with each phase, community engagement and communications activities continued throughout this phase.

The current phase, Phase 3, explores how the City can work towards its desired future state. To begin, Phase 3 identifies gaps, challenges, and opportunities. From there, actions that work towards the City's vision are considered and evaluated. Considerable community engagement was conducted during Phase 3 and took the form of open houses, workshops with interested parties and a public survey.

Phase 4 will be the final phase and will involve consolidating and summarizing the findings from Phases 1 through 3. A final strategy to guide the City's management of solid waste over the coming decade will be created during this last phase.

2 Phase 2 Summary

2.1 Future State

In Phase 2 the SWS Vision Statement and Guiding Principles were developed to provide an understanding of the desired future of waste management at the City.

The options put forward in this phase are oriented to bring about the vision and to be consistent with the intentions of the guiding principles.

2.1.1 Vision Statement

A draft Vision Statement for the SWS was developed and presented to the SWS' Technical Advisory Committee (TAC) and Solid Waste Advisory Panel (SWAP) in April 2023. It was subsequently presented to the City's Operations Committee (OC) and the public through an online survey in May and June 2023.

The final SWS' vision statement is:

As a community, we commit to being stewards of the land by taking progressive actions to manage our waste responsibly, extend the life of our landfills and preserve our shared environment for future generations.

2.1.2 Illustration of the Vision Statement

In developing the vision statement, key themes included community, sharing, stewardship, responsible waste management and preserving the natural environment for future generations. A graphic was produced to illustrate these themes and to communicate the vision statement during Phase 3 engagement activities. The vision statement graphic intends to reflect Greater Sudbury's character, acknowledge its diversity, and depict features of its built and natural environment.



Figure 1: Vision Statement Graphic



2.1.3 Guiding Principles

As established during Phase 2, the SWS' guiding principles are:

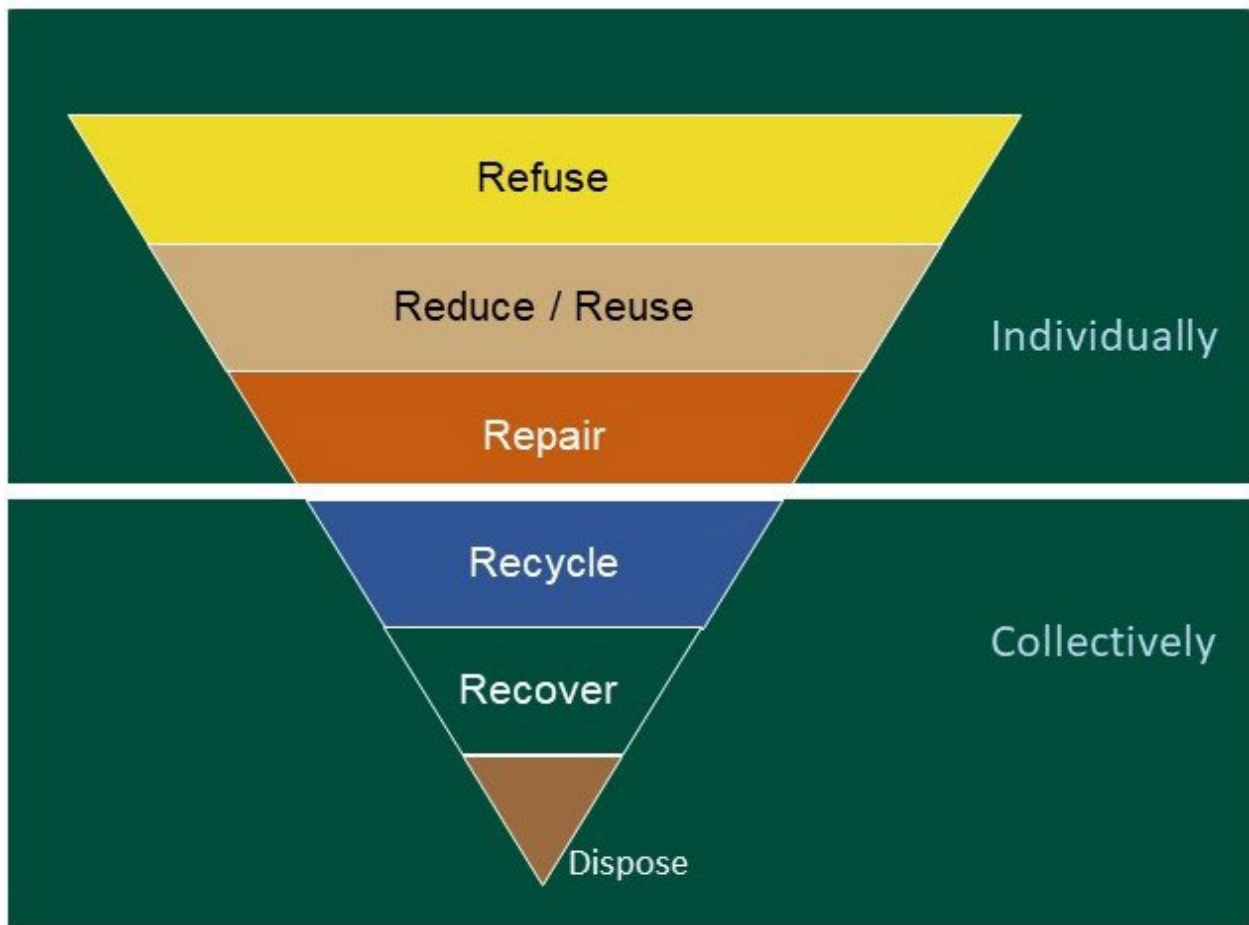
1. Apply the waste hierarchy;
2. Prolong the life of the City's landfills;
3. Improve and/or augment programs and agreements that benefit the City financially and evaluate their contribution;
4. Promote responsible behaviour through the provision of promotion and education, and by making diversion programs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

These guiding principles have been applied while developing options for the future of waste management in the City.

2.1.4 Waste Hierarchy

During Phase 2, the SWS adopted a six-tier waste hierarchy – a conceptual framework that can be helpful in thinking about the impacts of programs, policies, initiatives or processes by identifying whether their impacts contribute to outcomes associated with the concept of zero waste. **Figure 2** provides the SWS’s waste hierarchy. Descriptions of each element are also provided below. A solid white line divides the waste hierarchy into two distinct segments: the top segment are actions people can do individually and the bottom segment are actions that are done collectively, as they rely on the City’s waste management systems.

Figure 2: Waste Hierarchy



Definitions for the SWS' Waste Hierarchy Terminology

Refuse: To make choices that prevent the generation of waste.

Reduce: To lessen the generation of waste by reducing (e.g., purchasing products with less packaging) and reusing products or materials (e.g., bringing reusable shopping bags to the grocery store).

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.

3 Gaps, Challenges and Opportunities

Understanding the unique characteristics of Greater Sudbury enables the City to work towards implementing programs, policies and operational practices that are appropriate for the local context.

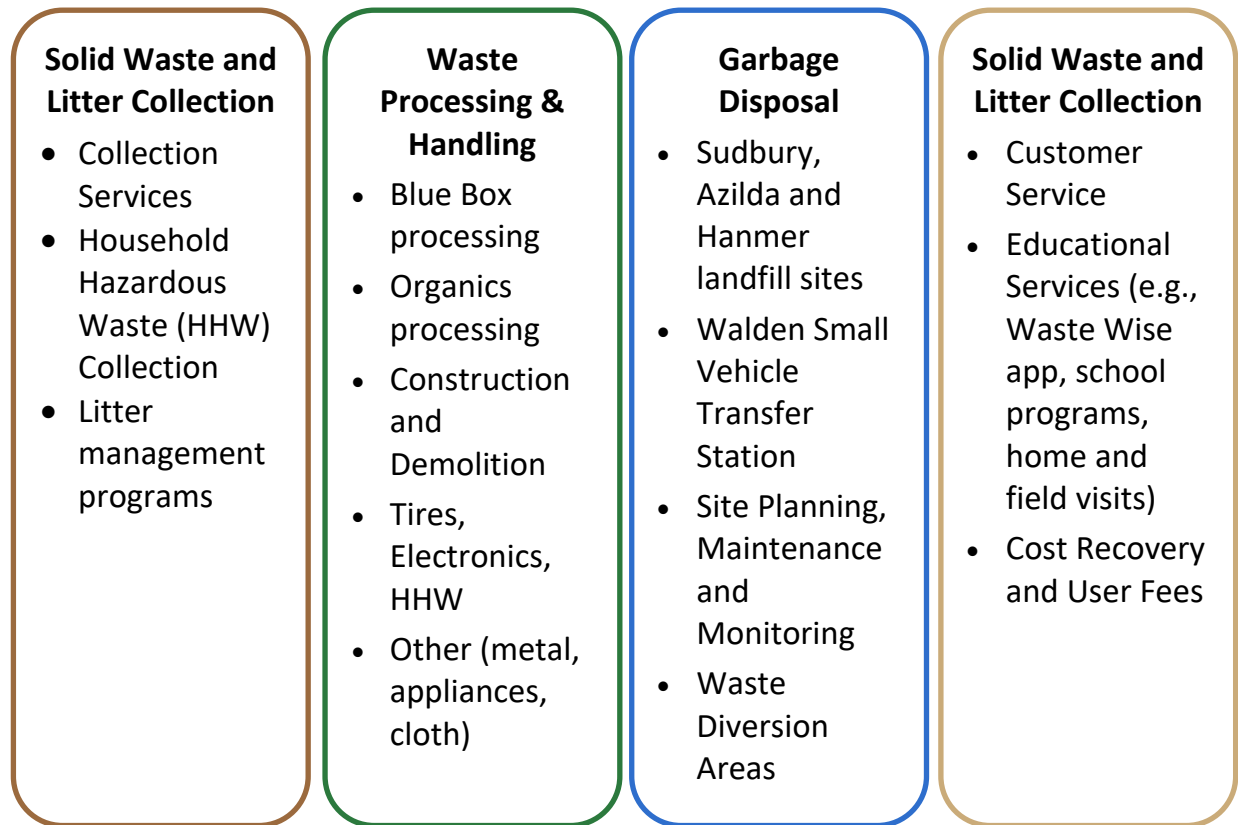
Phase 3 began with the identification of gaps and challenges that impact the waste management system. The following section is intended to support Environmental Services in learning more about gaps in the City's current waste management system, barriers in the industry and at the City, and identifying opportunities for improvement.

Figure 3: Gaps, Challenges and Opportunities Identification



Environmental Services consists of four sub-services: Solid Waste & Litter Collection, Solid Waste, Waste Processing & Handling, Garbage Disposal, and Customer & Education Support (**Figure 4**). The sub-sections below identify gaps, challenges, and opportunities that each sub-service can address.

Figure 4: Environmental Services' Sub-services



3.1 Solid Waste & Litter Collection

Solid Waste & Litter Collection provides waste collection services to several customer types (e.g., residential roadside, high density residential or high density residential (HDR), municipal facilities, public space containers, etc.), and delivers programs (e.g., toxic taxi, rebate programs, litter abatement programs, etc.) to the public or eligible recipients. The programs and services delivered through this sub-service are already aligned with the SWS' Guiding Principles in several ways, such as promoting responsible behaviour. For example, an existing policy within the Solid Waste & Litter Collection sub-service is for waste collectors to leave behind waste that does not conform to the Solid Waste by-law.

3.1.1 Gaps and Challenges

Contamination

Source separation is a critical element of an effective waste management system. Source separation requires individual action by residents, or anyone using garbage, recycling, and organic waste services, to identify the type of waste they have and to

place it into the correct waste container. Contamination causes a number of problems, including:

- When non-recyclable items (e.g., organics, textiles) are placed in the recycling, Blue Box items can become soiled, and sorting costs can escalate. Equipment at Material Recovery Facilities (MRF) can be damaged, cause temporary shutdowns and interfere with operations, and/or the final product (i.e., baled materials) can be downgraded thus reducing the revenue potential of the product.
- When organic waste is placed in the garbage, it becomes landfilled and contributes to the generation of methane within the landfill. Methane is a potent greenhouse gas and is estimated to be at least 25 times more potent than carbon dioxide.¹
- When recycling is placed in the garbage, the opportunity for it to be recycled is missed, resulting in lost potential revenue and resource recovery.
- When garbage is placed in the Green Cart, it can become difficult and costly to remove, particularly if the material becomes small particles, such as microplastics which are an environmental and health hazard.

Illegal Dumping and Misuse of Public Space Containers

Illegal dumping and the misuse of public space litter containers is a concern in many municipalities. Illegal dumping is not only costly for the City to clean up but it can cause environmental impacts. Dog feces in public spaces may pose a health and safety issue, particularly when left on the ground, or if it becomes contamination in the recycling. It should be noted that dog feces are not permitted in the City's public space garbage bins and that Environmental Services is not responsible for litter collection in parks, beaches, dog parks and trails. Further information is required to identify the locations where the issue needs to be addressed, identify roles and responsibilities for addressing it, and to identify and evaluate the effectiveness of various approaches and tactics.

Efficiency

The City has one of the largest land areas of municipalities in Canada (3,627 square kilometres) and, as an amalgamated City, is comprised of several different communities, including Sudbury, Capreol, Nickel Centre, Onaping Falls, Rayside-Baldour, Valley East, Walden, and other communities where the population density is relatively thin. The discrepancy in population densities within different urban, sub-urban and rural communities within Greater Sudbury presents a challenge for achieving efficiency in waste collection. As the City is working to reduce its emissions, Environmental Services

¹ Accessed December 2023: <https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/reducing-methane-emissions.html>

has an opportunity to find efficiencies in how waste is collected to reduce fuel consumption from collection vehicles and operations. In doing so, it will be important for the City to consider how it can provide services to its rural, suburban and urban communities in a way that both meets its residents' needs and remains flexible to changing/new programs while maintaining a high level of efficiency.

The City currently has a collection routing and vehicle locating software system to support efficiency and customer services excellence. However, the program does not support newer technology that could potentially provide more efficient routing options, additional data and monitoring capacities. Newer solutions are available that can improve efficiencies in collection and expedient resolutions to customer service inquiries.

Collection Service Standards & Unlimited Set-out Quantities

Bulky waste (furniture, appliances and electronics) collection is contracted to a private service provider, and low density residential (LDR) households eligible for roadside collection can make unlimited pickup requests on the Waste Wise app, Waste Wise online tool or by calling 311 to request the collection of any eligible furniture, appliance, or electronic item. Currently, regardless of how closely the pickup requests are clustered together, the item will be picked up within three business days of making the request. As a result, there are some inefficiencies in the collection of large furniture, appliances, electronics, due to collection vehicles needing to service a wide geographic area within a short time to meet the current service standard.

Health and Safety Risks

Increasingly, the waste industry is adopting automated collection, whereby residents place waste into carts, wheel it to the roadside and automated devices on the collection vehicle lift the cart and tip into the compartment. This shift helps the waste industry with employee retention and hiring as it reduces physical strain and repetitive motions on collection operators. As the City collects waste from approximately 63,000 households, efforts to promote health and safety of workers handling waste is critical for ergonomic, operational, and financial reasons. In addition, cart collection can be completed more quickly, which reduces emissions and operating costs.

Another common health and safety concern for waste collectors manually handling waste is the risk of injury as a result of handling hazardous waste, including sharps (syringes, needles and lancets). To mitigate this risk, the City currently uses promotion and education tactics to advise residents that sharps should be dropped off at a pharmacy. If a resident is found placing sharps in their roadside waste, one warning will be provided before the City ceases to collect from that address.

3.1.2 Opportunities

New Collection Contract

The City's current waste collection contract ends in 2028 with possibility to extend for an additional one-year period to 2029, and the procurement of a new service contract brings with it an opportunity to seek new terms, including seeking improvements to the type of vehicles and technology used. In developing the new collection contract, staff need to be aware that the design and features of collection vehicles must be consistent with policies and operations decided upon by the City. For example, the type of collection container (can/bag or cart) provided to residents must match the type of truck. The expiry of the existing waste collection contract and the procurement of a new contract represents opportune timing to introduce operational changes to the waste collection system.

The City has the opportunity to undertake planning for policy and operational changes so that their roll-out coincides with the new contract. Doing so would reduce the need to renegotiate terms later. The City may also wish to consider the timing of internal coordination and monitoring mechanisms that need to be in place given policy and contract changes.

Typically, procuring a new collection contract is a multi-year undertaking, and an added challenge is that the successful bidder usually requires considerable time (at least a year) to obtain its equipment before the contract begins. Supply chain delays and shortages of vehicle parts in the truck-manufacturing industry should also be considered.

3.2 Waste Processing & Handling

Waste Processing & Handling is responsible for the management of waste that has been collected, apart from the garbage stream. It includes:

- Sorting and sale of Blue Box recycling;
- Composting of leaf and yard trimmings and Green Cart/Yellow Cart organics;
- Grinding and reuse of wood waste, concrete and brick;
- Handling tires, electronic waste, scrap metal, appliances and textiles for reuse or recycling; and
- Recycling, reuse and disposal of household hazardous waste (HHW).

This sub-service is also responsible for the transfer of waste received at the Walden Small Vehicles Transfer Site, which is transported to other waste management facilities.

3.2.1 Gaps and Challenges

Securing Cost-effective Agreements to Provide Waste Diversion Services

The ability of a municipality to recycle any given material is dependant on the availability of a stable market (i.e., a company that will process the material into a new product). The cost-effectiveness of doing so is largely dependent upon the cost to collect, sort and ship the material to market. Securing cost-effective agreements with recycling vendors is a challenge as many are located in Southern Ontario or further away. This means that Greater Sudbury would incur relatively high transportation costs to the vendor's facility.

For example, many municipalities have identified mattresses as a particularly challenging material to manage in a landfill (as they can not easily be compacted and therefore consume a large volume of landfill space). Mattresses are also a challenging material to recycle as there are few facilities accepting them. The City has piloted shipping mattresses to Ontario Mattress Recycling (which formerly operated in Barrie, Ontario) and Recyc-Matress (which operated in Woodbridge, Ontario and in Quebec) however, a gap continues to exist in the recycling industry, as there are few processors available and both transportation and processing costs are high.

Processing Textiles

Across the waste management industry, the lack of processing solutions for textiles that cannot be resold as used clothing is a challenge while at the same time, the trend of 'fast fashion' has been increasing the volume of textiles generated. Based on residential waste composition studies, textiles represent approximately 5-7% of the garbage stream.² Diverting this stream can extend the life of the landfill and contribute to Community Energy and Emissions Plan (CEEP) goals.

Currently, most reusable textiles are managed through thrift shops and charities, and unwanted textiles are eventually landfilled or shipped to poorer countries. Processing options for shredding textiles are limited, to a large extent, due to the labour required to sort it, remove metal components (e.g., zippers, clasps), and because clothing is often a blend of fibres that would respond differently to treatments (e.g., polyester-cotton-nylon blends). To manage textiles at the top of the waste hierarchy, and to increase the City's chances of having used textiles remain in a reusable condition (e.g., not become soiled during collection, shipping, and handling), opportunity may exist to coordinate

² Urban Regional CIF waste audit data; as well, Metro Vancouver's waste audits data indicated that textiles account for approximately 6 percent of waste in their single-family household garbage and 7 percent in multi-family garbage.

the receipt of used goods, so that they are more easily resold rather than being handled and processed as waste.

Organic Waste Processing Capacity

There is currently a gap between the quantity of organic waste that the City would likely be **able to collect**, and the quantity of organic waste that it is **able to process**. The gap is a result of insufficient processing capacity and limited available footprint at the City's composting facility located at the Sudbury landfill. Through research studies, the City has worked towards closing this gap by assessing the feasibility of having an organics and biosolids anaerobic digestion facility. It is also considering aerobic technologies that could be implemented likely at a lower capital cost and still achieve the CEEP goal of diverting 90% of solid waste by 2050 or finding partnerships or other facilities to which it could transport the organic waste.

When the City secures additional processing capacity, it anticipates expanding organics collection services to additional customers, (i.e., HDR customers that are not on roadside collection, and larger industrial, commercial and institutional (IC&I) participants such as restaurants, grocery retailers and seniors' residences).

Individual Producer Responsibility (IPR) Transition

While changes will be experienced across all sub-services, Waste Processing & Handling may be one of the sub-services most heavily impacted by the transition of the Blue Box program to IPR. Within Waste Processing & Handling, some changes have already taken place, notably, the Recycling Centre at 1825 Frobisher Street, was operated by Waste Connections until February 2023, and is now being operated under contract to HGC Management in preparation for the transition to full producer responsibility on April 1, 2025. In addition, Waste Processing & Handling has already adjusted to the introduction of IPR programs for tires, HHW, batteries and some electronics, and program changes have presented various challenges and opportunities. For example, under the Batteries Regulation (O.Reg. 30/20) which became effective in 2020, producers have a statutory obligation to meet mandatory targets for the quantity of batteries they capture and process, and to provide a collection network. However, through its HHW program, the City continues to play a critical role in addressing the problem of keeping batteries from being improperly disposed. As improper disposal of batteries continues to pose health and safety and environmental concerns, the City can continue to seek opportunities to augment services to encourage people to divert batteries through the appropriate outlets.

A next step will be to document the impact of IPR programs, which could involve keeping data that reflects the impact of the programs on waste quantities. Doing so would enable the City to identify trends, and have the necessary information to

influence policy and legislative development with the different interested parties such as producers, Resource Productivity and Recovery Authority (RPPRA), the Association of Municipalities of Ontario (AMO) and/or the Ministry of Environment, Conservation and Parks (MECP).

3.2.2 Opportunities

Local Partnership Opportunities

The City currently has a Reuse Store (situated at the Sudbury Landfill) where the landfill operating contractor places items that are reusable (e.g., household goods, sporting equipment) for purchase at a low cost. Redistributing and reusing materials, rather than processing it as recycling of waste, is a way to reduce costs and support people in the community. Other opportunities may exist for local partnerships to contribute to waste processing solutions while supporting local economic development. Another example that is already in place is the City's provision of compost produced from the collection of leaf and yard trimmings for greening efforts at Vale. Diverting waste materials to other local businesses that can benefit from receiving them can also help the City reduce emissions to reach its CEEP goals.

3.3 Garbage Disposal

The Garbage Disposal Sub-service is responsible for three active disposal sites (i.e., Sudbury, Hanmer, Azilda), including site planning, monitoring, and maintenance; as well as closed sites (Walden, Onaping and Nicole Centre landfill sites and the Dowling and Dryden Hauled Sewage Sites).

Waste management sites are heavily regulated by the MECP, and each site must be engineered and operated in compliance with its Environmental Compliance Approval (ECA). Closed landfill sites also have ECAs and must comply to all applicable provincial standards and requirements. Environmental Services is responsible for submitting mandatory landfill operations reports to the MECP. This means that data must be collected and analyzed to meet ECA compliance requirements.

3.3.1 Gaps and Challenges

Imperfect Metrics: Mass versus Size Measures in Waste Management

Across the industry, waste quantities are measured by weight. A limitation of measuring in this way is that it does not account for how much room materials take up in a collection vehicle or a landfill. Landfill longevity is determined not by the weight of materials deposited, but the volume it occupies. Weights do not necessarily reflect how well a particular material can be compacted in a landfill and items, such as mattresses, can be relatively light while not compacting easily.

In Phase 2, the SWS identified new waste management system performance metrics. Due to the transition of the Blue Box recycling program, the traditional waste diversion rate may become a less relevant metric across Ontario municipalities. As the new metrics are implemented, business processes will need to be operationalized across each sub-service so any data gaps (i.e., the quantity of garbage disposed during landfill holidays) are closed and the correct information is collected and analyzed. To anticipate landfill life expectancy, the City may need to collect data through multiple tactics, which could include waste audits and composition studies.

Landfill Capacity

The City has approximately 25 years of landfill life remaining overall among the three existing landfill sites, if current disposal quantities are continued. Waste reduction and diversion is important to maintain the expected remaining lifespan and avoid the cost of an alternative disposal solution. The availability of capacity elsewhere in Ontario is extremely limited and the cost of a new landfill is very expensive. The City of Ottawa recently estimated that the cost to build a new landfill to be in the range of \$350 and \$400 million.

Traffic Congestion at Landfills

As a result of long lineups at the Sudbury Landfill, in 2020, the City installed a live camera at the Sudbury Landfill access road that broadcasts to a YouTube channel. This initiative allows residents to check-in to see whether there is a line-up before making a trip to the landfill. The solution has been cost-effective and has provided real time information to residents before they decide to attend the site. However, it does not resolve traffic flow concerns. Residents are still required to wait in line, and there is no separation of commercial and residential vehicles. If residents are dropping off more than one waste stream per trip, they are currently required to enter the site, drop one load then return to the scale to have their vehicles weighed-in again for the second load.

Spring and fall residential tipping fee holiday weeks (or free landfill weeks) accept residential waste at the City's three landfills and the Small Vehicle Waste Transfer Site, at no charge. The following challenges exist as a result:

- The free weeks attract a high number of visitors causing traffic issues such as long wait times, traffic congestion on public roads to the entrances and idling cars;
- It is operationally difficult for the City to collect accurate data on the weight of each material coming in each day during the landfill holiday; and
- Providing free garbage drop off counteracts the intention to encourage residents take to responsibility for the waste that they produce and makes the impact of

policy changes that strive to divert waste from disposal less clear. If the opportunity to drop off garbage during free weeks was removed, the City could more accurately monitor the impact of policy decisions such as bag tags for two reasons: firstly, it would eliminate the opportunity for residents to hold onto their waste until they can dispose of it for free, and secondly, it would allow the City to know whether changes to bag tag fees, collection frequency, etc., is impacting residents' behaviour.

3.3.2 Opportunities

Measures to Extend Landfill Life

There is extremely limited landfill capacity across Ontario. The City's active landfills are valuable assets and extending their lifespan will also defer the cost associated with securing future residual waste disposal options (e.g., new landfill, expanded landfill, alternative technologies).

To achieve a longer lifespan, the City could implement programs and policies to enhance waste diversion. One area where the City has the jurisdictional authority to make changes, is in its waste collection policies and fees. For example, the City could introduce changes to the way garbage is collected, implement fees for excess garbage, remove tipping fee holidays, etc. As well, this type of reduction and diversion effort could be focused on both residential roadside collection policies and policies pertaining to waste collection from facilities.

Another area of focus in prolonging landfill life is maximizing the waste compaction achieved at the sites during operations thereby making the optimal use of the remaining space available at the landfill sites. There are new technologies and approaches used to maximize compaction of waste at landfills.

Lastly, to maximize its landfill space, the City could consider additional waste diversion programs that target materials that consume large volumes of space such as bulky items. Collection policy changes and new diversion programs are one mechanism to address the quantity of large items being disposed. As noted earlier, new diversion programs can be implemented once stable and cost efficient markets to accept those materials have been secured.

Landfill and Waste Diversion Site Operations

As mentioned above, the City has installed a live camera at the Sudbury Landfill access road that broadcasts to a YouTube channel. Additional opportunities exist to improve traffic flow to reduce wait times and improve customer experience at the sites. This may include creating a by-pass for commercial vehicles to enter separately from residential vehicles. Another example would be for the City to improve its scalehouse equipment,

which may support effective traffic management as well as improving the City's ability to gather data on incoming waste types and quantities, customer and vehicle types, etc.

Greenhouse Gas Emissions from Waste Facilities

Technologies to collect landfill gas are used in state-of-the-art landfills to reduce methane release to the environment. In addition, captured landfill gas can be used as an energy resource, and is even a source of revenue for many landfills (i.e., at larger landfills). The Sudbury Landfill is the largest of the City's landfills and is one example that has a regulatory requirement, due to its size, to have an active landfill gas collection system. The gas is captured and used to generate electricity.

Landfill gas capture at the City's smaller active and inactive landfills, where landfill gas capture is not a regulatory requirement, is not currently in place. While the small size of these landfills precludes them from energy production projects, an opportunity may exist to reduce emissions through the introduction of new technology or systems.

3.4 Customer & Educational Support

Customer & Educational Support is responsible for:

- Customer and educational services (e.g., Waste Wise app, social media, mailouts);
- Security Services;
- Customer and landfill use data collection;
- Participation studies;
- Field and home visits;
- Facility tours, presentations and events;
- Educational centre activities for school groups;
- School and large IC&I diversion programs;
- Processing of fees and revenue (e.g., garbage bag tags, tipping fees); and
- Receiving funding from stewardship / IPR programs.

The success of the solid waste management system depends upon residents' effective participation. The SWS' Vision Statement and the SWS' waste hierarchy imply that residents' sense of ownership and responsibility is critical for the system to function well. Customer & Educational Support is the sub-service that most directly provides outreach and education to encourage individuals to behave responsibly with respect to the waste that they generate.

3.4.1 Gaps and Challenges

Upcoming Communications Needs

When the Blue Box transition takes place on April 1, 2025, residents should continue to receive collection services in a way that is consistent with the services that they currently receive. However, as it is a transitional period, gaps and challenges may occur, and additional communications may be required. The City will need to monitor its need for additional promotion and education (P&E) and staff availability to respond to calls and be prepared for a higher volume of calls when there are new programs or changes to existing programs.

Inconsistencies in Waste Diversion Programs at City Facilities

Currently, City facilities' waste diversion performance is inconsistent. Only some municipal facilities (e.g., Citizen Service Centres, recreation facilities, libraries, etc.) are equipped with indoor and outdoor waste receptacles that easily allow users to separate their waste. The type of receptacle/ bin differs from location to location however, as to the services and signage. Introducing consistent signage, receptacles and services to facilities has the potential to educate the public and instill diversion habits. However, it remains a challenge as there are well over 200 facilities, which are spread out over a large geography. In addition, for outdoor locations, it is also important to consider issues such as the presence of wildlife.

Need for New Communications Tactics

Municipalities are increasingly using social media channels and other online tools to augment their promotion and education efforts. In changing its communication tactics, the City needs to remain cognisant of the diversity of its population. Environmental Services has a goal of effectively communicating with all age groups, including new residents to the City and those who are new to Canada as well.

One opportunity to augment waste diversion promotion and education is to highlight the work of the many organizations that operate within the City to divert waste. The City may be able to support organizations' mandates while reaching diverse community members with its key message on City programs and services in a meaningful way.

As well, introducing new communications tactics could also be effective for reaching HDR and institutional customers. Particularly if the organics program is rolled out to more customers, additional promotion and education will be required and the City will need to consider the appropriate communication tactics to effectively reach its target audience.

Paper Waste Generation

Under the IPR Blue Box Regulation, some municipalities are considered packaging and product producers because they supply printed paper to consumers in Ontario. As a result, municipalities are increasingly cognisant of the quantities of paper that they are generating for communications. The City may be required to report the quantity of printed materials that it distributes. Environmental Services' use of the Waste Wise App for P&E represents one opportunity to avoid paper mail outs. In developing new communication tactics, the City can consider the intended audience (e.g., elderly people, new Canadians, property managers, etc.) and opportunities to provide effective tools, which may or may not be print-free.

3.4.2 Opportunities

Fees and Funding Sources

As mentioned, Customer & Educational Support is responsible for Environmental Service's revenue and fees. This sub-service will also be impacted by changes associated with the introduction of IPR Regulations in Ontario because of changes to the funding that municipalities receive. The City will no longer receive revenue from the sale of the recycling that is sold into the market and funding from Stewardship Ontario will cease. Since 2004, Stewardship Ontario has operated the province's Blue Box curbside recycling program, which included collecting fees from paper and packaging stewards and providing funding to municipalities to cover half of their program costs. Stewardship Ontario's funding has already been discontinued for other diversion streams (e.g., household hazardous waste).

Section 7 outlines three different approaches to funding of the waste management system: through property tax, user rate or a combined approach. Currently residents contribute to the waste management system's funding through property taxes, which does not allow for rates to be based on the quantities that each household sets out. An opportunity exists for the City to reconsider its options with respect to how it charges residents/users, while considering what motivates people to participate effectively in diversion programs and disincentivizes them to generate higher quantities of garbage.

Lead by Example

The current level of waste management services in City facilities is inconsistent as some facilities diverting well and others poorly. Currently, some facilities have bins for diversion, and some do not, and there are different waste streams collected indoors and outdoors at the same facility. City facilities such as libraries, arenas, and recreation centres are a City asset, and a means through which the City can engage the public. Instilling good diversion practices among staff, permit holders, and facility users would enable them to demonstrate how waste should be properly sorted, and set an example

that residents could bring home. If clear instructions and diversion containers were provided, these facilities could help the City improve diversion and accelerate its work towards CEEP goals. The same applies with maintaining education programs at schools.

Leverage Interest in the SWS

The SWS’ public surveys have achieved a significant response rate. During Phase 2, respondents identified that they would want the City to be known as efficient, clean, sustainable, green and environmentally friendly. Overall, the survey indicates that interest exists for the City to foster a culture where residents take responsibility for the waste they generate and engage in activities related to refusing waste, reducing and reusing, repairing, and recycling. There is an opportunity to tie in new or enhanced programs resulting from the SWS to the vision residents are seeking.

3.5 Summary

To summarize, the four subsections within Environmental Services are experiencing and/or addressing gaps, challenges and opportunities listed in **Table 1**.

Table 1: Summary of Gaps, Challenges and Opportunities

Sub-section	Gaps / Challenges	Opportunities
Solid Waste & Litter Collection	<ul style="list-style-type: none"> • Contamination within various waste streams due to poor source separation; • Illegal dumping and misuse of public space containers; • Efficiency challenges, as the City spans a geographically large area and has a high customer service level; and • Ergonomic and health and safety risks associated with collection (including improper disposal of hazardous waste). 	<ul style="list-style-type: none"> • When the next collection contract is procured, the City has the ability to introduce new terms and conditions, which could align with changes to waste management policies and procedures.
Waste Processing & Handling	<ul style="list-style-type: none"> • Securing cost-effective agreements to provide waste diversion services; • Processing textiles; 	<ul style="list-style-type: none"> • Partnerships with local organizations may help the City operate at the top of the waste hierarchy and avoid

Sub-section	Gaps / Challenges	Opportunities
	<ul style="list-style-type: none"> Organic waste processing capacity; and Changes to the IPR Transition of the Blue Box program. 	<p>the need to process the material as waste; and</p> <ul style="list-style-type: none"> Expand organics processing capacity.
Garbage disposal	<ul style="list-style-type: none"> Imperfect metrics; Landfill capacity; and Traffic congestion at landfills. 	<ul style="list-style-type: none"> Extend landfill life; Landfill and waste diversion site operations improvements; and Reduce greenhouse gas emissions from waste facilities.
Customer & Educational Support	<ul style="list-style-type: none"> Upcoming communications needs; Inconsistencies in waste diversion programs at City facilities; Needs for new communications tactics; and Paper waste generation. 	<ul style="list-style-type: none"> Reconsider fees and funding sources; Lead by example; and Leverage the public’s interest in the SWS.

4 Options Identification

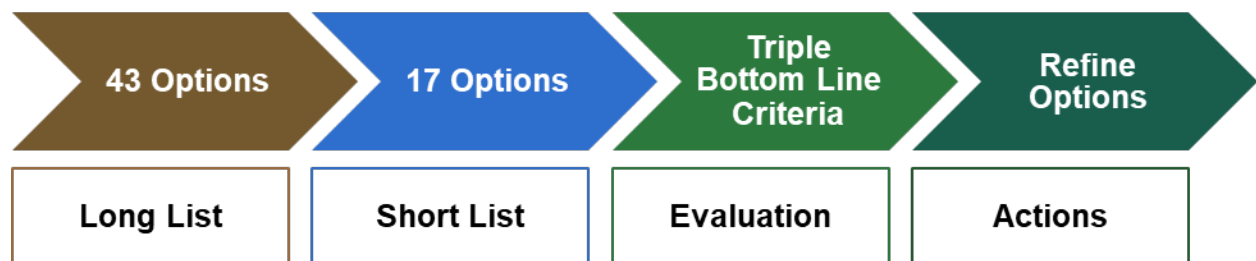
To work toward the SWS vision and guiding principles an initial list of potential options was developed. The initial options were informed by research conducted during Phase 1 on the current waste management system, as well as the gaps, challenges and opportunities outlined in **Section 3**.

Figure 5 summarizes the options development process that was applied during Phase 3. The initial long list had 43 options, which were prioritized and refined to create a short list of 17 options. This process is described in more detail in **Section 4.1**.

Once the short list of 17 options was confirmed, the triple bottom line evaluation criteria that had been developed in Phase 2 was applied to the options. The outcome of the evaluation is provided in **Section 6.1**.

The final refined options are recommended actions for the City to implement over the next 10 years, following Council adoption of the Strategy.

Figure 5: Options Development Process



It should also be noted that during this process the project team held extensive internal and external engagement. Internally, presentations were given to the Technical Advisory Committee (TAC), Growth and Infrastructure Leadership group, Executive Leadership Team, SWAP and the OC. Feedback from these committees was integrated to refine the options prior to conducting external engagement activities.

External community engagement activities included drop-in community events, workshops with interested parties, and an on-line survey to present the short-listed options, describe what each would involve and how it addresses issues and/or provides

opportunities for improvement in relation to the current state of waste management in Greater Sudbury. These activities are described in **Section 5**.

4.1 Long List of Options

The initial long list of options for consideration was summarized in a table format that identified the following:

- Origin of the idea (e.g., consultation with the public, TAC);
- The sub-service group within Environmental Services that is mostly responsible for tasks associated with the option (i.e., Solid Waste & Litter Collection; Waste Processing & Handling; Garbage Disposal; and Customer & Educational Support);
- Guiding principle(s) which it addresses (refer to **Section 2.1.3**);
- Potential for the option to reduce garbage quantities; and
- Relative cost impact (i.e., within a low/minimal, medium, high threshold).

4.1.1 Internal Consultation to Refine Options

The TAC was provided with the long list of 43 options for their consideration on August 10, 2023. Each member was asked to prioritize the options on the list independently and provide reasons for their comments. TAC members provided their input through email. On August 14, 2023, the TAC met to discuss their comments on the long list, share their rationale for promoting or demoting the options and working collaboratively to put forward up to 20 options for further consideration. During the meeting, the group further refined the options: rethinking some options, reframing ideas to be more effective and better align with operational practices, and combining ideas that work well together. Following the meeting, a short list of 19 options was provided to the Director of Environmental Services for review and approval.

On September 13, a high-level presentation on the project, an overview of the process of refining the options, and the result of the TAC's work to refine the list of options, was provided to senior management at the Growth and Infrastructure Leadership (G&I) meeting.

The short-listed options were then presented to the SWAP on September 20, 2023. The SWAP was provided with a description of each option, assumptions about how it could be implemented and a sample to show how the evaluation criteria would be applied to the options.

The options were presented to the Executive Leadership Team on October 5, 2023, followed by the OC on October 16, 2023. Input from members was used to modify the

options so that they more closely align with the City’s strategic direction and waste management needs. As well, the detailed plan for consulting the public and interested parties on the options was provided during these presentations.

Figure 6: Internal Consultation to Refine Options - Meeting Dates



4.1.2 Outcome of Internal Engagement

As the TAC discussed the options, some were combined with others or modified to become new options. **Table 2** provides a summary of the initial long list of options explored and indicates whether the initial option was:

- Kept – i.e., remains on the final list of options;
- Kept with revision(s) – i.e., the option remains on the final list but with some revisions, for example, to provide a solution that is more applicable to the current state of waste management at the City;
- Merged – i.e., combined with other options; and
- Removed – i.e., the option will not be carried forward at this time for further consideration.

A rationale to explain why the option was kept, revised, merged, or removed is also provided. The final list of options is provided in **Section 6.1**.

Table 2: Initial Options and Outcome of TAC Review

ID number (#)	Option Name	Option Description	Outcome	Reason
1	Waste reduction/ climate lens in decision making	Include achievement of waste reduction and climate change-related outcomes in high-level staff performance reviews (to encourage decision makers to adopt this lens).	Merged	CEEP goals apply to all options.
2	Advocacy for EPR expansion	Advocate for producer responsibility programs for materials that are not currently covered under provincial programs (e.g., C&D, mattresses).	Removed	This is already occurring in the City through partnerships with AMO and Regional Public Works Commissioners of Ontario (RPWCO).
3	Quantity of garbage set-out limits	Review how to limit the number of garbage bags set out for collection per household (e.g., implement a bag tag limit or increase bag tag costs).	Merged	Merged into the two options: See Section 6.1 “Bulky waste collection program review” and “Preferred future collection system.”
4	Review of leaf and yard waste collection program	Review ways to optimize leaf and yard collection program (e.g., banning grass clippings, limiting quantity accepted, collection frequency, modifying collection routes or service standards, etc.).	Kept	See “Review leaf and yard trimming collection program.”

ID number (#)	Option Name	Option Description	Outcome	Reason
5	Service review of furniture and appliances	Adjust service level for bulky items (e.g., large furniture) and appliances in time for the bulky waste collection contract renewal.	Kept (with revisions)	See “Bulky waste collection program review.”
6	Litter and illegal dumping strategy	Develop a strategy to reduce litter and illegal dumping incidents.	Kept	See “Litter and illegal dumping strategy.”
7	Battery collection program	Partner with an organization who will collect household single-use and rechargeable batteries (that are included in the Batteries Regulation) during an annual round-up (that would take place over the course of a month).	Merged	See “Enhance roadside collection.”
8	Battery collection program	Develop an agreement with a PRO (a registered hauler or processor) for batteries to be accepted from the HHW depot for processing.	Merged	The City’s Toxic Taxi program and HHW depot already provide a sufficient level of service and there is already an IPR program for battery processing. However, some residents are still placing used batteries in the garbage. Efforts to improve battery diversion is included in “Enhance roadside collection.”

ID number (#)	Option Name	Option Description	Outcome	Reason
9	Clear garbage bag program	Implement a clear bag program for garbage until the collection contract ends in 2028.	Kept	See “Clear bag program.”
10	Automated cart collection program	Implement an automated cart-based collection program for garbage beginning in 2028.	Merged	See “Preferred future collection system” option which also includes exploring reduced emission emitting fleets and a full user pay model.
11	Green fleet	While preparing the procurement for the collection contract, transition to collection vehicles to electric trucks or RNG fuel to support CEEP goals.	Merged	See “Preferred future collection system” option.
12	Bulky waste cost recovery	Charge a fee (e.g., cost/stop, cost/item) for the collection of mattresses, box springs and other bulky materials to recover / partly recover cost of recycling (transportation and processing costs).	Kept (with revisions)	See “Bulky waste collection program review.”
13	Full user pay system	Switch to a full user pay system for some (i.e., garbage) or all waste (i.e., garbage + organics) collection/disposal/processing services – i.e. waste services removed from the tax levy completely.	Merged	See “Preferred future collection system.”

ID number (#)	Option Name	Option Description	Outcome	Reason
14	Disposal and diversion cost analysis methodology	Develop a methodology to calculate landfill space saved through diversion programs and the value per cubic meter of that landfill space.	Removed	A separate independent User Fee analysis will provide City's cost for providing solid waste management services. This work is already underway, and the methodology is set out in that scope of work.
15	Eliminate Residential Tipping fee holiday	Eliminate this program completely or reduce to one week per year to create incentives to divert materials from disposal.	Merged	See "Recovery of waste management costs" option which explores ways to recover costs, increase diversion and save valuable landfill space.
16	Eliminate Residential Tipping Fee exemption	Eliminate the 50 kg/week exemption and implement a flat rate tipping fee.	Removed	The User Fee analysis (described in row 14) will provide information on the appropriateness of the exemption.
17	Implement a Gate Fee at Landfill Site	Implement a gate fee to access the landfill site to help reduce small trips and improve vehicle congestion for those who really need to use it.	Merged	See "Recovery of waste management costs" which explores ways to recover costs, increase diversion and save valuable landfill space.

ID number (#)	Option Name	Option Description	Outcome	Reason
18	Camera system on outside of waste collection vehicles	Require camera system on waste collection vehicles to improve customer service responses.	Merged	This option may be included in “Enhanced customer service delivery through technology” which is a broader review of available technologies to improve collection operations, routing and customer service.
19	Incentive and enforcement mechanisms	Apply a combined approach to incentivize organic waste diversion through reward and recognition programs and to target enforcement efforts towards residents with poor performance based on visual audits on set out days.	Removed	Incentives and enforcement mechanisms are included in other options, where relevant. For example, the options for “Clear garbage bag program” and “Review leaf and yard trimming collection program” include enforcement considerations.
20	Staffing support for compliance	Increase the staff complement of Field Officers within Environmental Services who are trained to enhance waste compliance.	Removed	The number of Field Officers needed is contemplated within the analysis of the other options.
21	Organics Diversion for IC&I	Once processing capacity is secure, implement a collection program for IC&I customers and provide P&E.	Kept	Renamed to “Increase organics collection from non-residential sector.”

ID number (#)	Option Name	Option Description	Outcome	Reason
22	Organics Diversion for HDR	Once processing capacity is secure, implement a collection program for HDR customers and provide P&E.	Kept (with revisions)	Renamed to “Increase organics collection from apartment buildings” and revised to include development review (option 23).
23	Development review	Once processing capacity is secure, review building standards and develop review process for HDR properties to receive Green Cart collection services.	Merged	Added to the “Organics Diversion for HDR” option.
24	Organic waste processing and funding	Continue to seek new organic waste processing capacity through aerobic composting solutions.	Kept	See “Organic waste processing and funding.”
25	Landfill airspace optimization	Enhance landfill technology, design and/or operations to maximize airspace.	Merged	Components in this option were merged into the “Landfill operations enhancements” which includes purchasing equipment to measure and monitor compaction at landfills and modernized scale software.
26	Passive LFG mitigation biosystems	Implement passive LFG biosystems at closed sites and applicable closed landfill cells to reduce Greenhouse gas (GHG) emissions.	Kept (with revisions)	Renamed to “Reduce greenhouse gas emissions at landfills.”

ID number (#)	Option Name	Option Description	Outcome	Reason
27	Landfill operations enhancements	Increase operational efficiencies and reduce wait times at landfill and diversion sites by implementing traffic control measures such separating vehicles entering the site by type or size, creating bypass lanes, or other solutions.	Merged	Revised to include landfill airspace optimization (option 25).
28	Customer service data management to support blue box transition	Track pre-transition and post-transition customer service response data so that the City can advocate if there is an increase in the number of complaints following transition date.	Removed	This option is something that the City already has in place.
29	Waste quantity/composition data management	Conduct back-end waste audits to measure performance of programs and identify other materials for potential diversion as well as understand composition pre- and post-transition so that the City can advocate if there is an increase in Green Cart contamination, recycling in garbage, or other quantity/composition issues.	Kept	Renamed to “Conduct waste quantity and composition studies.”

ID number (#)	Option Name	Option Description	Outcome	Reason
30	Annual Promotion and Education campaigns	Develop and implement an annual promotion and education campaign to increase resident understanding of pressing topics. Use P&E tactics that are reflective of the diverse needs of the City.	Removed	Promotion and education added into each of the final options.
31	Waste Wise App Optimization	Seek input from other jurisdictions using the Waste Wise App to identify features and information that they use and that the City could adopt.	Removed	This option is too specific and a broader approach can be taken to continuous improvement to City's promotion and education.
32	Enhance Special Event Recycling/Organics	As part of the special event program, include a requirement for organizers to receive training on what goes where and have someone direct users to proper bin.	Merged	Merged into the "Enhance waste diversion at municipal facilities" which includes developing a training manual for employees.
33	Increase partnerships through incentives	Offer incentives for community members, NGOs, and businesses to manage materials the City wants to have diverted (e.g., offer space for existing repair cafes).	Removed	Partnerships and incentives can be contemplated on a continual basis where needed and is not required as a specific recommendation within the SWS.
34	Partnerships with educational institutions	Identify opportunities to partner with Laurentian University, Cambrian College, and/or Collège Boréal to advance research in waste management.	Removed	Partnerships and incentives can be contemplated on a continual basis where needed and is not required as an option within the SWS.

ID number (#)	Option Name	Option Description	Outcome	Reason
35	Food redistribution	Identify existing food redistribution programs in the city and identify ways that Environmental Services can enhance or support them to reduce food wastage.	Removed	There are organizations in the City already active on this issue. It does not need to be an option within the SWS.
36	Update waste by-law	Keep the by-law updated to reflect changes to service level, funding model and other changes as a result of SWS etc.	Removed	The by-law will be updated regardless of whether it is identified as an option in the SWS. By-law amendments will reflect changes in the IWMS that result from the implementation of the SWS.
37	Circular procurement policy development and operationalization	<p>Develop a circular economy procurement policy and guidance document.</p> <p>Operationalize circular procurement through decisions and purchases within Environmental Services: e.g., reduce paper used for P&E; ask for warranties and repair when procuring carts, etc.).</p>	Removed	Cross-corporate and strategic initiatives are underway where Environmental Services is a participant. The SWS will focus on action that Environmental Services is responsible for.
38	Pilot dog waste collection	Pilot dog waste collection at roadside litter containers programs.	Kept	Refer to “Pilot separate dog waste collection.”

ID number (#)	Option Name	Option Description	Outcome	Reason
39	Bulky waste refurbishment and reuse	Seek an organization that can accept and refurbish bulky items in good condition and develop an agreement to support it.	Removed	There are organizations in the City already active on this issue. The City can promote and support these organizations.
40	Textile donation bin standardization	Develop approach to standardize textile recycling within the City and partner with reputable organizations.	Merged	Merged into the “Enhance roadside collection” and may include identifying non-profit organizations who provide textile collection.
41	Local circular economy opportunities	Hold a series of workshops for the local community and representatives from key economic sectors (i.e., mining, academia), NGOs and local institutions, to brainstorm ways to increase partnerships and create local circular opportunities.	Kept	Refer to “Create local circular economy opportunities and markets.”
42	Reuse programs	Host a series of sharing events, repair cafes, and repair teaching sessions in partnership with local community groups.	Removed	There are organizations in the City already active on this issue. The City can promote and support these organizations.
43	Circular economy roadmap	Along with other City sections, develop a circular economy roadmap that would identify cross corporate initiatives and build on synergies/ strategic efforts related to circularity.	Removed	There are organizations in the City already active on this issue. It does not need to be an option within the SWS.

4.1.3 Refined List of Options

As a result of the internal engagement, the following 17 options were presented to the public during public engagement activities described in **Section 5**:

1. Create local circular economy opportunities and markets;
2. Recovery of waste management costs;
3. Clear garbage bag program;
4. Enhance roadside collection;
5. Bulky waste collection program review;
6. Preferred future collection system;
7. Enhance diversion at municipal facilities;
8. Conduct waste composition studies;
9. Enhance customer service delivery through technology;
10. Review leaf and yard trimming collection program;
11. Organic waste processing and funding;
12. Increase organics collection from non-residential sector;
13. Increase organics collection from apartment buildings;
14. Pilot separate dog waste collection;
15. Litter and illegal dumping strategy;
16. Landfill operations enhancements; and
17. Reduce GHG emissions at landfills.

5 Engagement

5.1 Public Engagement

Public engagement during Phase 3 was a critical element in informing and refining the short-listed options. A variety of events were held throughout Greater Sudbury to gather feedback including four community workshops for interested parties; five community drop-in events for the public, and an online public survey that ran from October 18, 2023, to November 7, 2023.

5.1.1 Outreach

The City used a number of outreach tactics to invite community members to participate in engagement activities. This included a public service announcement, printed posters and postcards (see in **Figure 7** below) which were handed out by City staff at various venues including public libraries, recreational centers, arenas, the recycling center, HHW depot, landfill and transfer sites, at local events like farmers markets, crafts shows and hockey games before and during engagement activities. Email invitations were also sent to interested parties including community and environmental organizations, businesses and property managers. Engagement activities were promoted through a public service announcement, on the City website and social media platforms such as Facebook and X (formerly Twitter).

Figure 7: Postcard

City of Greater Sudbury Sustainable Waste Strategy

As a Community

for Future Generations

As a community, we commit to being stewards of the land by taking progressive actions to manage our waste responsibly, extend the life of our landfills and preserve our shared environment for future generations.

The City of Greater Sudbury is developing a Sustainable Waste Strategy to guide how the City will manage waste (e.g., garbage, food waste, etc.) for the next 10 years.

Join the conversation and have your say!

Join us at a community drop-in event to speak with the project team and learn more:

Sudbury Market Square at Elm Place 40 Elm Street Saturday, Oct. 21, 2023, from 9 a.m. to 2 p.m.	Chelmsford Community Centre and Arena 215 Edward Ave. Chelmsford Sunday, Oct. 22, 2023, from 3:30 to 7:30 p.m.
Toe Blake Memorial Arena 70 Government Road, Coniston Saturday, Oct. 21, 2023, from 3:30 to 7:30 p.m.	Lively Public Library and Citizen Services Centre 15 Kin Drive, Unit A Monday, Oct. 23, 2023, from 2 to 4 p.m. and 6 to 8 p.m.
Howard Armstrong Recreation Centre 4040 Elmview Drive, Hanmer Sunday, Oct. 22, 2023, from 9 a.m. to 1 p.m.	

 **Take the survey between Oct. 18 and Nov. 7 and let us know what you think of the proposed options to improve waste management**

<https://overtoyou.greatersudbury.ca/sustainable-waste-strategy>

Figure 8 reflects the social media response, by reporting the number of impressions, clicks, comments, reactions, shares, etc. Local media also picked up on the SWS, and the Clear Bags Option in particular, and promoted the engagement events.³

Figure 8: Social Media Reach

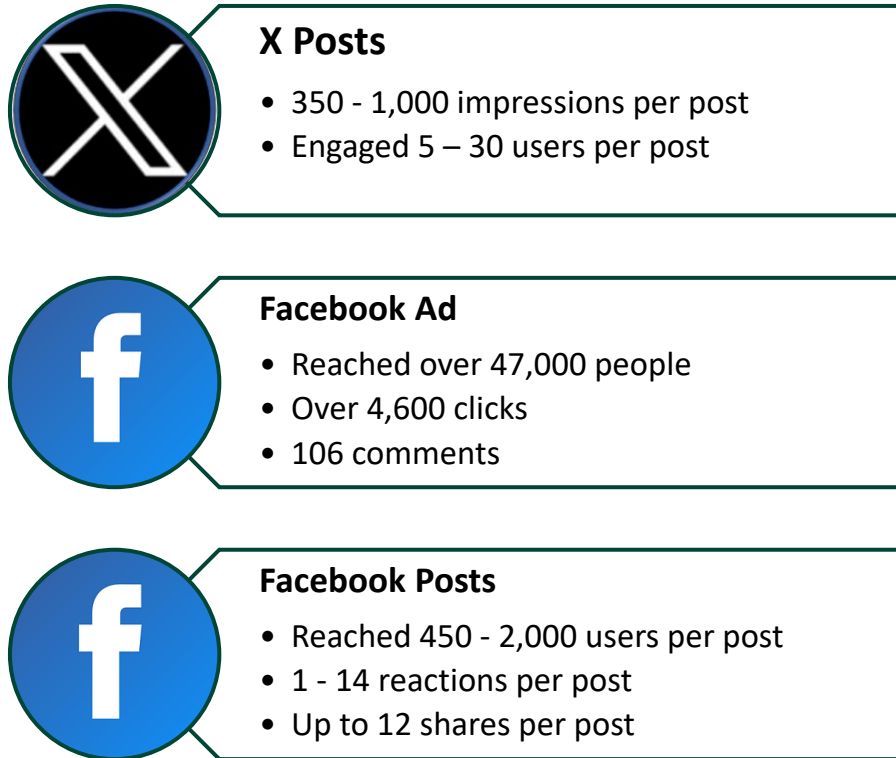


Figure 9 summarizes the engagement activities, including the dates, times, and locations of the five community drop-in events, the target audience for the four community workshops and the date range and number of responses to the public survey.

³ For media coverage, see <https://northernontario.ctvnews.ca/sudbury-may-require-use-of-clear-plastic-garbage-bags-to-boost-recycling-composting-1.6603116> and <https://www.sudbury.com/city-hall/opportunities-sought-to-help-spur-more-people-to-recycle-7693887>.

Figure 9: Engagement Summary



It should be noted that the number of people who completed the survey (i.e., 1,537 respondents) was a significant increase from Phase 1 and Phase 2, which gathered responses from 187 and 280 people, respectively.

A total of 170 people interacted with staff at the community drop-in events. Events were spread across the City to reach people from different communities. **Figure 10**, provides the number of people reached per neighbourhood.

Figure 10: Community Drop-In Events Participation

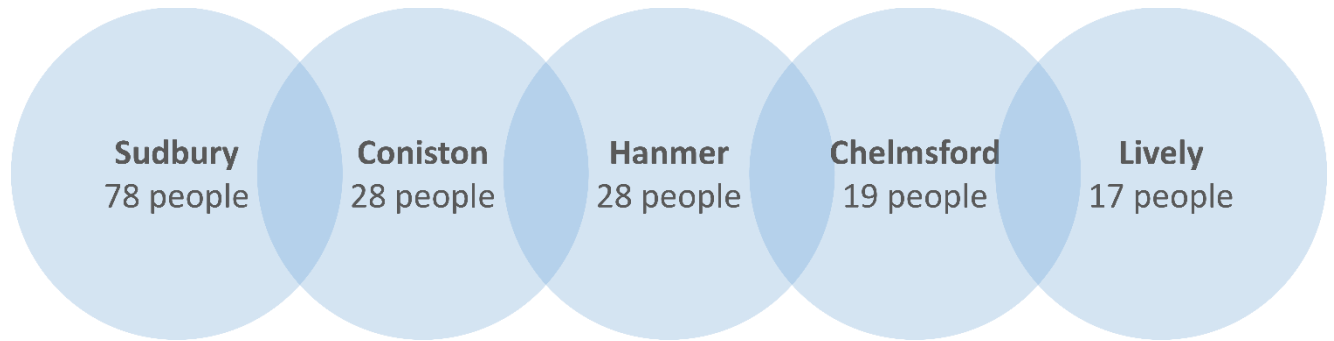
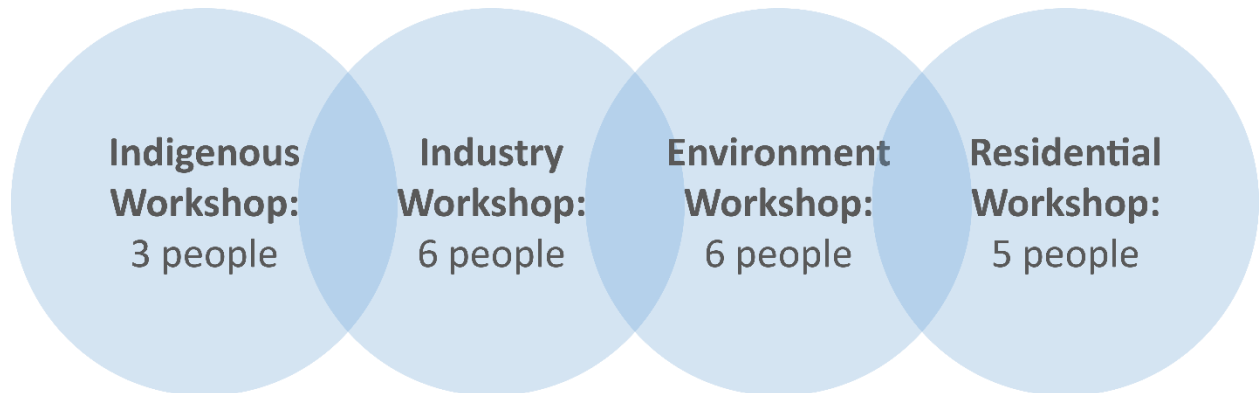


Figure 11, provides the number of people who attended community workshops which totalled 20 attendees for all four workshops.

Figure 11: Workshop Participation



5.1.2 Presentation of the Options

The 17 short-listed options were presented to the public for consultation. Presentation materials included a Microsoft PowerPoint slide deck for the workshops, printed display boards for the community drop-in events, and a project website update on the City’s “Over To You” page for survey participants. The information that was presented included:

- Background on the project (including why the project is being completed);
- An overview of the current state of waste management;
- What was heard in previous engagement (Phase 1 and 2);
- City’s guiding principles;
- Option development process;
- Option evaluation criteria;

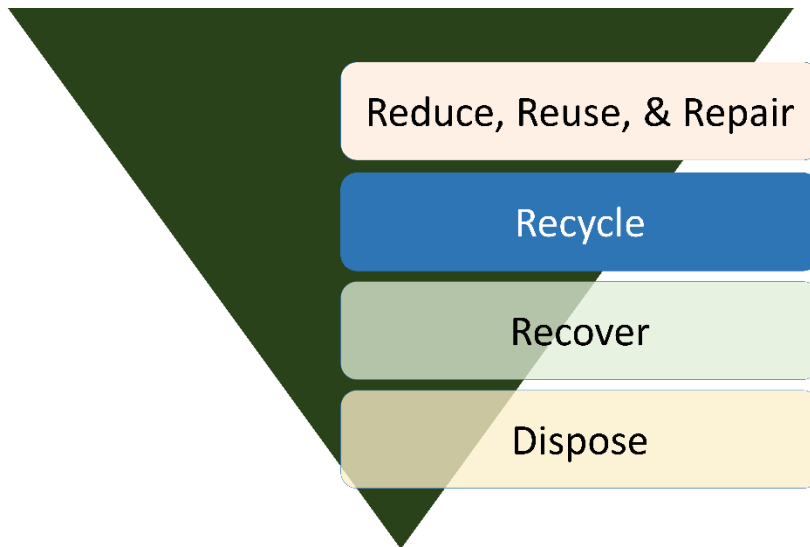
- Recommended options organized by the waste hierarchy as follows:
 - Reduce, reuse and repair;
 - Recycle;
 - Recover; and
 - Dispose.
- Links to more information.

For context, presentation notes included relevant examples of Greater Sudbury’s experience, such as how the option aligned with the City’s current operational practices, gaps, challenges and/or opportunities, where possible. To aid the discussion with the public, the project team had also prepared a succinct description of each option, the rationale for its inclusion in the SWS and assumptions about how the option would be implemented.

5.1.2.1 Waste Hierarchy Categories

During Phase 2, a Greater Sudbury-specific waste hierarchy was created, as shown in **Figure 2**. The waste hierarchy shows reduce as the most preferred behaviour to achieve, followed by reuse and repair. For the purposes of categorizing the options, reduce, reuse and repair were clustered together. The categories shown in **Figure 12** were used to present in the options during the engagement activities.

Figure 12: Categories Used to Cluster Options



5.1.3 Survey Results – Level of Support for Options

As mentioned, the public survey received 1,537 individual responses. The survey asked the respondent to indicate their level of support for each of the 17 options.

Respondents selected whether they were very supportive, supportive, neither supportive, unsupportive, or very supportive of the City carrying forward with the option. The level of public support for each option was calculated as a percentage (where 0% represents no public support and 100% represents all respondents being very supportive).

To illustrate the level of support per option, checkmarks were used that range from 1 (very unsupportive) to 5 (very supportive). For each option, the number of check marks beside each option indicates the degree to which Greater Sudbury residents and interested parties support the recommended options.

Table 3 shows the level of support each option received in the survey. The number of options increased by one additional option as a result of the engagement process (as Option 10 was introduced) and the option reference numbers therefore differ from those in **Section 4**.

Table 3: Level of Support for Options Received in the Survey

Note:

- Very supportive: 81% to 100%
- Supportive: 61% to 80%
- Neutral: 41% to 60%

Category	Option	Level of Support
Reuse, Reuse and Repair	Option 1 - Create local circular economy opportunities and markets	Very supportive
Recycle	Option 2 - Cost Recovery	Supportive
	Option 3 – Clear Garbage Bag Program	Neutral
	Option 4 – Enhance Roadside Collection	Very supportive
	Option 5 – Bulky Collection Program	Supportive
	Option 6 – Preferred Future Collection System	Supportive
	Option 7 – Waste Quantity and Composition Studies	Supportive
	Option 8 – Enhance Waste Diversion at Municipal Facilities	Supportive
	Option 9 – Enhanced Customer Service Delivery through Technology	Supportive
	Option 10 (new) – Diversion Tool Kits for HDR and IC&I Sectors	Not included in survey as added after Phase 3 engagement
Recover	Option 11 – Leaf and Yard Trimmings Collection Program	Supportive
	Option 12 – Organic Waste Processing and Funding	Supportive
	Option 13 – Organics Collection from Non-residential Sector	Very supportive
	Option 14 – Organics Collection from HDR Buildings	Very supportive
Dispose	Option 15 – Pilot Separate Dog Waste Collection	Supportive
	Option 16 – Litter and Illegal Dumping Strategy	Very supportive
	Option 17 – Landfill Operations Enhancements	Very supportive
	Option 18 – Reduce Greenhouse Gas Emissions at Landfill	Very supportive

The majority of options received 70% or more support from respondents. The options that had “very supportive” feedback with between 81% to 100% support were:

- Option 1 – Create Local Circular Economy Opportunities and Markets;
- Option 4 – Enhance Roadside Collection;
- Option 13 – Organics Collection from Non-residential Sector;
- Option 14 – Organics Collection from HDR Buildings;
- Option 16 – Litter and Illegal Dumping Strategy;
- Option 17 – Landfill Operations Enhancements; and
- Option 18 – Reduce Greenhouse Gas Emissions at Landfill.

The option that had the least support was:

- Option 3 – Clear Garbage Bag Program.

The Clear Garbage Bag Program received a 50% level of support, or a neutral overall response.

5.1.4 Summary of Themes Heard During Consultation

The subsections that follow provide a summary on the themes heard from the public and interested parties through the engagement activities.

5.1.4.1 Responses to the Survey’s Open-ended Questions

As well as the ranking questions for each option, the survey also included open-ended questions to allow residents to provide feedback on the options, per category. On average, approximately 25% of respondents provided additional feedback through these open-ended questions. The responses received are summarized below.

Reduce, Reuse & Repair

For this category, 409 respondents (or 27 % of respondents) provided comments.

Feedback gathered in the survey showed that the majority of respondents were very supportive of this option. Respondent understood the importance of reducing waste and reusing items.

In addition, respondents had a broad array of ideas for reuse: where an old item could again become functional, or where it could be used for decorative purposes. Several respondents suggested the creation of a community repair hub or recycling facility

where residents can drop off items for repair or reuse. Respondents also highlighted the need to incentivize manufacturers and businesses to use less packaging. Education and awareness campaigns were mentioned. This included a recommendation for waste reduction workshops, as well as the inclusion of waste-related information in school curriculums. While the City already has a 3Rs curriculum in place, a resident made an additional suggestion for the City to inform residents about the anticipated Right to Repair legislation.

Recycle

For this category, 574 respondents (or 37% of respondent) provided comments. As previously mentioned, the level of support in the Recycle options was mostly supportive, with one option (Enhance Roadside Collection) receiving 'very supportive' and one option (Clear Garbage Bag Program) being neutral. The open-ended comments indicated mixed sentiments regarding the recycling-related options. The most mentioned options were the Clear Garbage Bag Program and Cost Recovery. The largest concerns about these two options were reduced privacy, accessibility, and increased cost. The following examples provide a sense of the considerations and concerns the public has in relation to the options:

- **Cost Recovery:** Concerns are focused on the potential for increased costs for services.
- **Clear Garbage Bag Program:** Concerns around privacy and fears of pressure to recycle properly.
- **Enhance Roadside Collection:** Expressed a desire for improved electronics and battery recycling through call-in services or more accessible drop-off locations.
- **Bulky Collection Program Service Review:** Concerns over changes and the potential for a reduction of bulky item collection and access to service. Respondents suggested that the City partner with local organizations or charities for bulky item picks ups.
- **Waste Quantity and Composition Studies:** Suggestion that the City should focus on measuring waste generated by businesses and high density residential (HDR) buildings.

It is important to note that comments received in the Recycle category also led to the introduction of an additional option. An option for diversion tool kits for HDR and IC&I sectors was created. This option was not included in the survey as it was added to the list after its closing date.

Recover

For this category, 345 respondents (or 22%) provided comments.

The following feedback was received in response to the options categorized under recover.

- **Leaf and Yard Trimmings Collection Program:** Many respondents suggested to increase collection, so that it would occur weekly. Some residents suggested increasing collection to weekly at certain times during the year, such as early spring and late fall, when more yard work is done. Residents suggested weekly collection would prevent issues such as bag breakage and nuisance concerns.
- **Organic Waste Processing and Funding:** Respondents would like to see a market for compost and mulch to be sold in the community.
- **Organics Collection from the Non-residential Sector:** Respondents supported this option and suggested the City explore incentivizes for businesses to increase participation of composting and recycling programs.
- **Organics Collection from HDR Buildings:** Respondents supported this option and suggested the City explore incentivizes for HDR buildings to increase participation of composting and recycling programs.

Dispose

For this category, 312 respondents (or 20%) provided comments.

The following feedback was received in response to the options categorized under dispose.

- **Pilot Separate Dog Waste Collection:** Some suggestions included offering dog waste composters at reduced cost or free and considering options for cat waste too. Some concerns regarding costs were noted.
- **Litter and Illegal Dumping Strategy:** Some respondents indicated that illegal dumping is prevalent in the City. Some are concerned that with the implementation of certain options, it may lead to an increase in illegal dumping. Suggestions to mitigate these potential issues included enhanced enforcement and by-laws.
- **Landfill operations enhancements:** The majority of respondents were very supportive of this option as there was commentary associated with long line ups at the sites.

5.1.4.2 Community Events and Workshops

The following provides a summary of theme heard through the public drop-in events and the workshops with interested parties.

Reduce, Reuse & Repair

Community drop-in and workshop attendees were overall supportive of building a circular economy within the City through the related option plus other suggestions like repair cafes, closet shares, zero waste events, and partnerships with local organizations to reuse items.

Recycle

There was good discussion on recycling in Greater Sudbury. The events provided an opportunity to answer questions, concerns and to fact check what truly happens. Similar concerns were raised as with the survey regarding privacy and the clear garbage bag option. Concerns mostly dissipated once people realized the allowance of opaque bags within each clear garbage bag. One common statistic that was heard was how many residents believe that a high percentage of recyclables that are collected through the City's Blue Box program are disposed at the landfill. The project team provided clarity that approximately 10% of what is collected are contaminants or unacceptable materials which does get landfilled while the remaining 90% gets sold to markets for recycling. Some HDR and IC&I property owners or residents were concerned with the poorer diversion performance than LDR properties. Workshop participants representing HDR properties encouraged the City to provide additional P&E support to this sector.

The feedback gathered during the consultation resulted in the City's decision to add a new option to those under consideration in the SWS. The new option "Diversion tool kits for high density residential and IC&I sectors" has been added and is included in the options evaluation in **Section 6.3**.

Recover

There was support to expand Green Cart collection, particularly at HDR buildings, with suggestions made to improve signage (i.e., larger font) for senior citizens. It was mentioned that the current leaf and yard trimmings collection program is not frequent enough during certain times of the year.

Dispose

Community drop-in and workshop attendees supported developing an illegal dumping strategy, due to their concerns about illegal dumping, and in particular, the dumping of tires. Attendees noted concerns with long line ups at waste facilities and thus supported the option to improve traffic flow within the sites.

There was also support for a pilot dog waste collection program, due to attendees' observation of considerable quantities of dog waste in parks, trails and residential front yards.

6 Options Evaluation

6.1 Refined List of Options

As a result of the internal and external engagement, adjustments were made to how the options were described and the assumptions behind how they would be planned and implemented. As mentioned, one additional option was also added to the list. The following 18 options were then evaluated as the recommended options for the SWS:

Reduce / Reuse / Repair

1. Create local circular economy opportunities and markets

Recycle

2. Recovery of waste management costs
3. Clear garbage bag program
4. Enhance roadside collection
5. Bulky waste collection program review
6. Preferred future collection system
7. Enhance diversion at municipal facilities
8. Conduct waste composition studies
9. Enhance customer service delivery through technology
10. Diversion tool kits for high density residential and IC&I sectors

Recover

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

Dispose

15. Pilot separate dog waste collection
16. Litter and illegal dumping strategy
17. Landfill operations enhancements
18. Reduce greenhouse gas emissions at landfills

6.2 Evaluation Criteria

During Phase 2, draft evaluation criteria were developed to assess each of the short-listed options. **Table 4** provides the finalized evaluation criteria that were used to evaluate the short-listed options. The evaluation was done based on a triple-bottom line approach that considered two indicators each for environmental, economic and social categories. The result with respect to each indicator were ranked from one to three, with a higher number indicating a more favourable evaluation. **Appendix A** provides the full an evaluation of each option.

Table 4: Evaluation Criteria

Category	Question	Indicator	Rank	Guiding Principle
Environmental	Does the option reduce carbon emissions and pollution in the City and beyond and work towards achieving net-zero emissions by 2050?	Climate Change Impacts [kilogram of carbon dioxide equivalent (kg CO ₂ eq)]	<ol style="list-style-type: none"> 1. Will result in little to no impact on carbon emissions and pollution. 2. Will result in moderate reductions to carbon emissions and pollution. 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 (m ³)	<ol style="list-style-type: none"> 1. Results in little to no impact on current waste infrastructure assets 2. Moderate changes to increase lifespan of current waste infrastructure assets 3. Significantly increases the lifespan of existing assets 	<p>#1 – Prolong the life of the City’s landfills.</p> <p>#2 – Apply the waste hierarchy.</p>

Category	Question	Indicator	Rank	Guiding Principle
Economic	What does the option cost the City in terms of capital and annual operating costs?	Cost to the City (\$) ⁴	<ol style="list-style-type: none"> \$300,000 or greater capital or annual costs \$300,000 to \$50,000 capital or annual costs \$50,000 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)	<ol style="list-style-type: none"> Very high risk (e.g., results, liability, environmental impacts, control by City) Moderate risk (e.g., some risks but they can be mitigated) Very low risk (e.g., good results, good for the environment, limited liability) 	<p>#5 – Advance (Individual Producer Responsibility) IPR programs and make appropriate decisions that reflect the evolution of IPR programs.</p> <p>#6 – Where viable markets or technologies are available, research the potential for diversion to balance environmental and financial priorities.</p>

⁴ During Phase 3, a change was made to economic evaluation to introduce a revised dollar value threshold for the cost to the City indicator. As shown in **Table 5**, the dollar values for capital or annual costs were reduced to create more meaningful cost differentiators between the three scores.

Category	Question	Indicator	Rank	Guiding Principle
Social	Does the option make diversion programs accessible, safe and convenient?	Accessibility and convenience	<ol style="list-style-type: none"> 1. Reduces accessibility and convenience 2. Has no impact on accessibility and convenience 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	<ol style="list-style-type: none"> 1. Option poses reputational risks or other hindrance to collaborating with partners 2. Option is neutral 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.

Table 5: Dollar Value for Capital or Annual Cost Evaluation

Score	Phase 2: Dollar Value	Phase 3: Dollar Value
1	\$500,000 or greater	\$300,000 or greater
2	\$500,000 to \$250,000	\$50,000 to \$300,000
3	250,000 or less	\$50,000 or less

6.3 Options Descriptions and Results of Evaluation

In this section each option is described. A rationale for the option is provided as well as key points on the Greater Sudbury’s experience in managing waste or other experience related to the option. Assumptions related to how the option would be implemented are also included.

The results from the triple-bottom line evaluation of the options are also presented.

6.3.1 Reduce/Reuse/Repair Option

The option in this section relates to the **reduce/reuse/repair** step of the waste hierarchy. **Reduce/reuse/repair** refers to lessening the generation of waste by reducing and reusing products or materials.

Option 1: Create local circular economy opportunities and markets

Level of Support: Very supportive

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 (including school boards) 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. Additionally, existing organizations that operate reduction and reuse initiatives in line with the circular economy will be showcased by the City.

Rationale / Greater 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.
- In addition to City initiatives, there are local organizations that operate reduction and reuse initiatives, for example repair cafes and donation based charities and retailers.

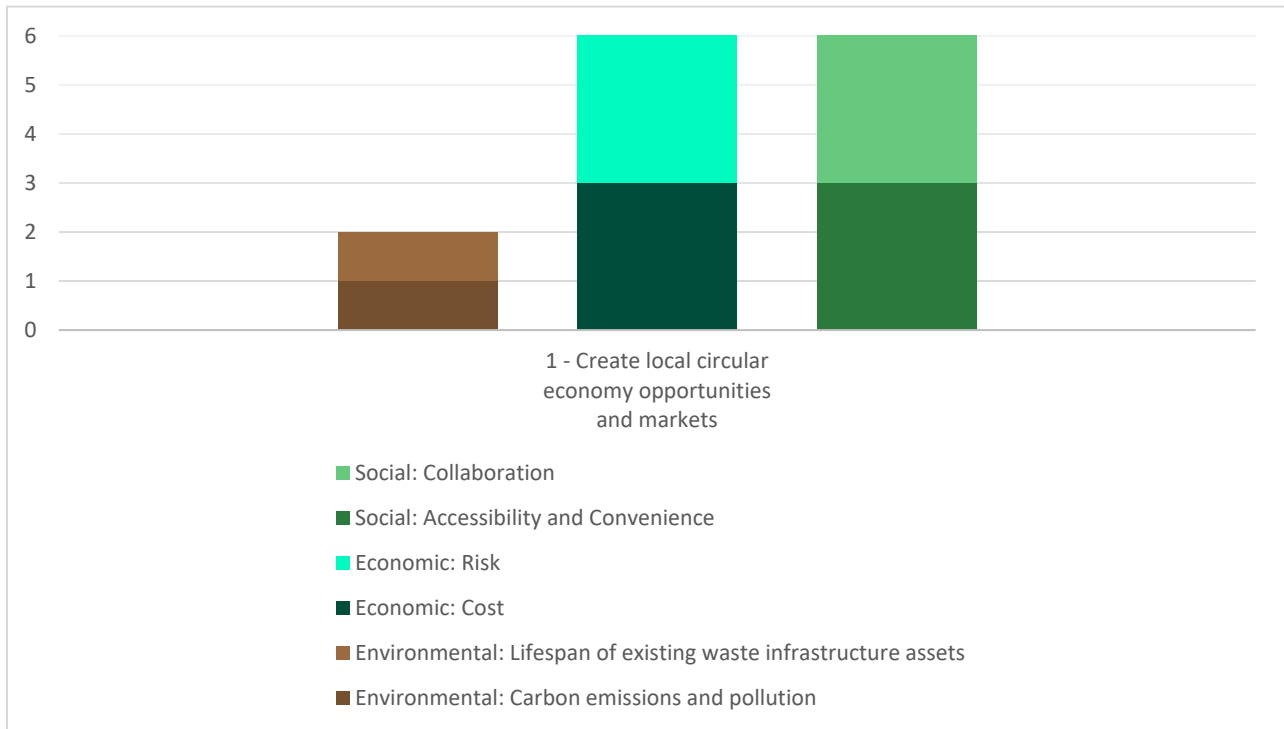
Assumptions:

- 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.
- Organizations that operate circular economy initiatives will be identified by Environmental Services for showcasing by the City.
- Potential for partnership on organics processing option.

Evaluation of the Reduce/Reuse/Repair Option

Figure 13 shows the results of the triple-bottom line evaluation of the **reduce/ reuse/ repair** option. Each of the indicators (e.g., collaboration, accessibility and convenience, risk, etc.) could receive a maximum rank (or score) of three. With each category (i.e., environmental, economic, and social), the maximum rank is six. Thus, the longer the bar, the more favourable the option has scored in the evaluation.

Figure 13: Reduce/Reuse/Repair Option Evaluation



6.3.2 Recycle Options

Options in this section relate to the recycle step of the waste hierarchy. **Recycle** refers to collecting, sorting and selling materials to secondary markets so that they will be incorporated into new products or packaging.

Option 2: Recovery of waste management costs

Level of Support: Supportive

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), whether the Residential Tipping Fee Holiday should be reduced or eliminated, consideration of fees for IC&I recycling processing and future organics collection, and processing for non-residential and HDR locations.

Rationale / Greater Sudbury Experience:

- Residents can drop off 50 kg per week without paying a tipping fee.
- After 50 kg, there is a tipping fee of \$3.50 for residential loads weighing 100 kg or less, then \$10.30 per 100 kg. Loads over one tonne are \$103 per tonne (as of 2024).
- Two weeks per year, one in the spring and one in the fall, the City provides residents with a “Residential Tipping Fee Holiday.” In 2024 and 2025, the Fall Tipping Fee Holiday will be eliminated and replaced with a pilot project. Staff will report back to the OC in 2025 on the impacts to the OC in 2025.
- Landfill tipping fees provide the largest revenue related to waste services to the City.
- Implementation would increase diversion in line with CEEP targets.

Assumptions:

- Findings from the User Fee Review will be incorporated.
- An equity lens will be applied when determining user fee costs.
- 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.
- A promotion and education campaign will be undertaken prior to user fees being implemented.

Option 3: Clear Garbage Bag program

Level of Support: Neutral

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 and to minimize collection operation health and safety incidents. 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 / Greater Sudbury Experience:

- Clear garbage bags incentivize participation in diversion programs which contribute to CEEP goals and will help streamline a potential transition to a cart-based collection program.
- The City provides waste collection to approximately 63,000 households and 350 high density residential properties.
- Current participation in the Green Cart program for organics is approximately 35% to 43%, depending on the area.
- The City's collection contract expires in 2028 with a possibility of a one-year extension.
- Collection operators are exposed to the risk of injury on a daily basis and have sustained injuries while picking up garbage bags that contains sharps. The use of clear bags would allow operators to see if bags contain sharps and/or potentially hazardous materials.
- Clear bag garbage programs are considered a best practice and have resulted in higher diversion rates in other jurisdictions. Clear bag garbage programs have been implemented in Kawartha Lakes, Orillia, Peterborough County, Dufferin County, Goderich, the Cities of Peterborough, Guelph and Markham. It is also currently being considered in Cornwall and Chatham-Kent.

Assumptions:

- Customers will be permitted to use a small opaque privacy bag within each clear bag.
- Proposed implementation timelines will be included in the draft SWS and a promotion and education campaign will be undertaken in advance of implementing the program.
- 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 will be required.
- The City will work with retailers to make sure clear bags are widely available.
- Program implementation will be done alongside increased enforcement, including by collection staff and the actioning of the litter and illegal dumping strategy to address potential temporary increase in illegal dumping occurrences.
- Thresholds will need to be established for unacceptable divertible content observed in clear bags before refusing collection and there will be some leniency around

these thresholds as the program is first rolled out, including through issuing warnings but still collecting the waste.

Option 4: Enhance roadside collection

Level of Support: Very supportive

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 / Greater Sudbury Experience:

- Based on residential waste composition studies, textiles represent 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.

Option 5: Bulky collection program service review

Level of Support: Supportive

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, and promoting specific days for gently used bulky items to be set at the roadside for reuse.

Rationale / Greater Sudbury Experience:

- Residents in LDR households eligible for roadside waste collection services 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 three-day service standard, with one day for the City to receive the request, and two days for the contractor to collect the items.

Assumptions:

- A consultant will be hired to undertake an independent review.
- 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.

Option 6: Preferred future collection system

Level of Support: Supportive

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 / Greater Sudbury Experience:

- The City's collection contract expires in 2028 with a possibility of a one-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:

- The review for a full user pay system will take place after other best practices have been implemented, including clear bags, user pay for garbage and higher Green Cart participation is achieved.

- An independent review would be conducted to establish a sustainable financial model to support moving towards a full user pay system.
- 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.

Option 7: Enhance waste diversion at municipal facilities

Level of Support: Supportive

The City will lead by example and enhance waste diversion programs 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 / Greater Sudbury Experience:

- Providing diversion at municipal facilities is a way in which the City can lead by example.
- All municipal facilities have the opportunity to receive recycling and organics collection 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.
- A training manual will be developed, kept updated and provided to existing employees and new hires.
- Additional public use waste containers will be required.
- The guideline will include a review of vendor contracts (e.g., event organizers, food service), rental agreements and janitorial contracts to ensure adherence to 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.

Option 8: Conduct waste quantity and composition studies

Level of Support: Supportive

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) for the different customer types (i.e., low density residential, high density residential and institutional, commercial and industrial).

Rationale / Greater 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 including three different areas for LDR, HDR and IC&I sectors.
- 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.

Option 9: Enhance customer service delivery through technology

Level of Support: Supportive

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 / Greater 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. Technologies will include integrated cameras with routing software.

Option 10: Diversion tool kits for high density residential (HDR) and IC&I non-residential sectors

(Not included in public survey therefore no results)

The City will develop promotion and educational resources for the HDR (e.g., property managers, superintendents, and residents) and the industrial, commercial and institutional (IC&I) (e.g., restaurants, businesses) sectors to increase diversion. Tool kits will include guidelines and tips for reducing contamination and increasing diversion and promotional and educational materials (including signage templates).

Rationale / Greater Sudbury Experience:

- Diversion from the HDR and IC&I non-residential sectors is much lower than from the low density residential sector, and contamination is much higher.
- The target audience is diverse in demographics (e.g., elderly, new Canadians) and promotion and education resources need to be tailored accordingly.
- Representatives from these sectors have requested City support to increase diversion from their properties.

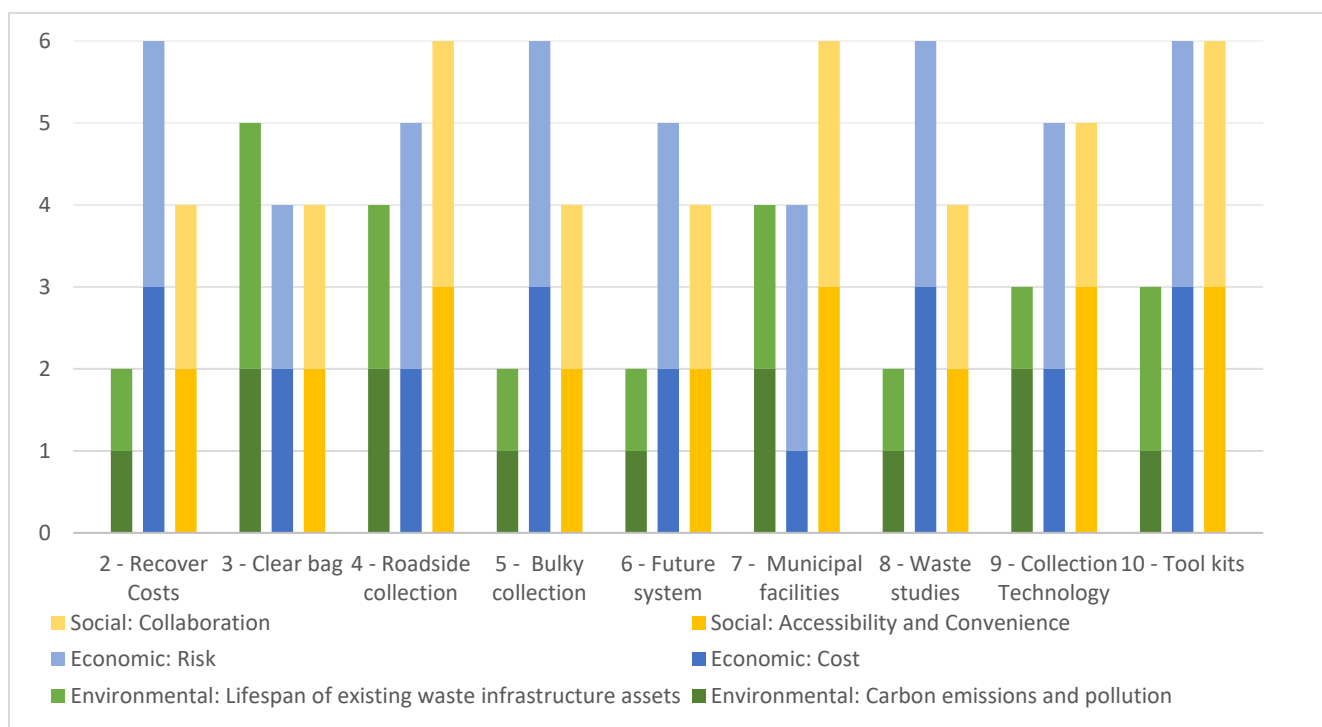
Assumptions:

- A consultant will be hired to develop the tool kits in collaboration with the City's Environmental Services and Communications departments.
- Materials and signage will be prepared in accessible formats and in English and French.
- Updates to resources will be made when new programs or changes to existing programs are implemented.

Evaluation of Recycle Options

Figure 14 shows the results of the triple-bottom line evaluation of the **recycle** options. The maximum rank for each indicator is three and for each category is six. Each of the indicators (e.g., collaboration, accessibility and convenience, risk, etc.) could receive a maximum rank (or score) of three. With each category (i.e., environmental, economic, and social), the maximum rank is six. Thus, the longer the bar, the more favourable the option has scored in the evaluation.

Figure 14: Recycle Options Evaluation



6.3.3 Recover Options

Options in this section relate to the recover step of the waste hierarchy. **Recover** refers to collecting, treating and using materials from nature, such as using leaf and yard trimmings for regenerative purposes and recovering energy from landfill gas.

Option 11: Review leaf and yard trimming collection program

Level of Support: Supportive

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

Rationale / Greater 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-round every other week.
- Residents can currently set out unlimited quantities.
- Acceptable materials include leaves, twigs and branches, grass clippings, house and garden plants, and 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, including timely updates to the City's website regarding the benefits of grasscycling and tips and tricks to do it effectively.
- Enforcement at the roadside will be required.
- Thresholds for maximum grass clipping content will be established.
- Review of number of collections on an annual basis will consider future collection system.

Option 12: Organic waste processing and funding

Level of Support: Supportive

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 / Greater Sudbury Experience:

- The City is not accepting new applications from the non-residential sector to join the non-roadside organics collection program and is unable to support the sector in meeting the targets in the province's Food and Organic Waste Policy Statement due to insufficient processing capacity. Currently no non-roadside collection 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. This composting area is at capacity and is unable to accept organics from additional sectors (non-roadside HDRs and IC&I establishments).
- A feasibility study considering the implementation of a combined biosolids and anaerobic digester facility is currently underway.
- Increasing diversion of organics would contribute to 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.
- A consultant will be hired to undertake an independent study that will document various factors of the different technology types.
- The City will have waste composition data to support generation rates.

Option 13: Increase organics collection from non-residential sector

Level of Support: Very supportive

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 required participation from new developments and/or compliance and outreach to new customers to inform of the program.

Rationale / Greater Sudbury Experience:

- The City currently provides a Yellow Cart program in a limited capacity for roadside 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 \$116 per year (2024).

- The City needs to increase organics diversion to meet its CEEP targets 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.

Option 14: Increase organics collection from high density residential buildings

Level of Support: Very supportive

Once the City has secured increased organics processing capacity, the non-roadside organics collection to the HDR sector will be implemented. 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 and by-laws.

Rationale / Greater 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:

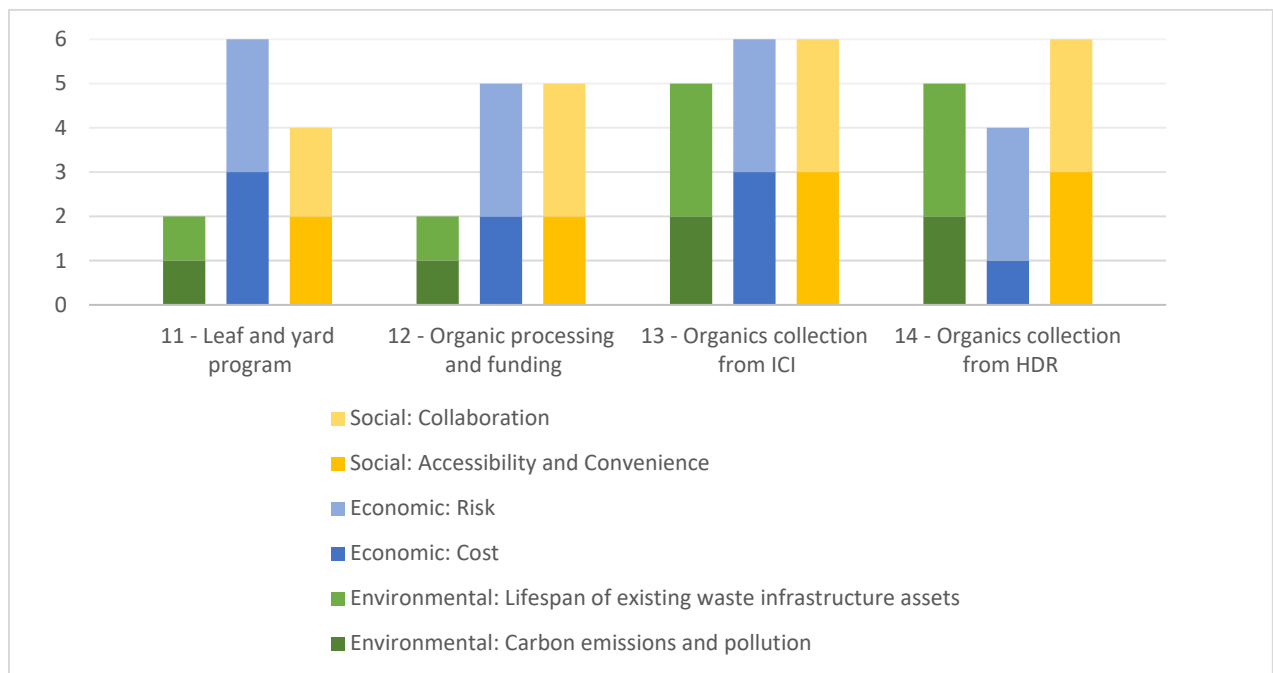
- This option will be implemented once the City has increased its organic waste processing capacity.
- Promotion and education materials will be developed for HDR customers.

- 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.

Evaluation of Recover Options

Figure 15 shows the results of the triple-bottom line evaluation of the **recover** options. Each of the indicators (e.g., collaboration, accessibility and convenience, risk, etc.) could receive a maximum rank (or score) of three. With each category (i.e., environmental, economic, and social), the maximum rank is six. Thus, the longer the bar, the more favourable the option has scored in the evaluation.

Figure 15: Recover Options Evaluation



6.3.4 Dispose Options

Options in this section relate to the dispose step of the waste hierarchy. **Dispose** refers to landfilling or incinerating materials without opportunity for them to be repurposed.

Option 15: Pilot separate dog waste collection

Level of Support: Supportive

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 / Greater 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, dog parks, and trails.

Assumptions:

- Pilot would involve installing in-ground dog waste receptacles next to up to five roadside litter containers.
- 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 (e.g. composted, digested or disposed) , which could likely be provided through a contractor.

Option 16: Litter and illegal dumping strategy

Level of Support: Very supportive

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 / Greater 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:
 - Provision of litter containers, with twice a week evening collection in downtown Sudbury by contactors and Monday to Friday daily collection by City crews and, weekly at the roadside outside of downtown Sudbury;
 - Non-containerized litter collection, including manual and automated litter collection vehicle collection conducted Monday to Friday in downtown Sudbury and seasonally outside the downtown core; and
 - Clean-up Greater Sudbury volunteer programs, including one-time and annual events as well as road, spot and bin adoption programs.

Assumptions:

- A consultant will be hired to undertake an independent study.
- Planning and implementation will coincide with when changes to existing waste programs, such as when clear bags for garbage or changes to bulky item collection are introduced, to address the potential temporary increases in illegal dumping occurrences.

Option 17: Landfill operations enhancements

Level of Support: Very supportive

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, and changing 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 / Greater 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 for the Sudbury and Azilda landfill sites.

- The City is seeking ways to increase operational efficiencies, reduce wait times at landfill and diversion sites, improve customer service, increase efficient performance measurement (scale software) and use landfill space efficiently (compaction technology) to extend landfill lifespan.
- The City's three landfill and waste diversion sites each have separate areas for public drop-off of materials for reuse and recycling.

Assumptions:

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

Option 18: Reduce greenhouse gas emissions at landfills

Level of Support: Very supportive

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 / Greater 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 as they fall below the provincial legislative requirements and are too small to provide a return on investment for a gas to energy project.
- The City manages post-closure care for three closed landfill sites that continue to emit methane gas or GHGs.

Assumptions:

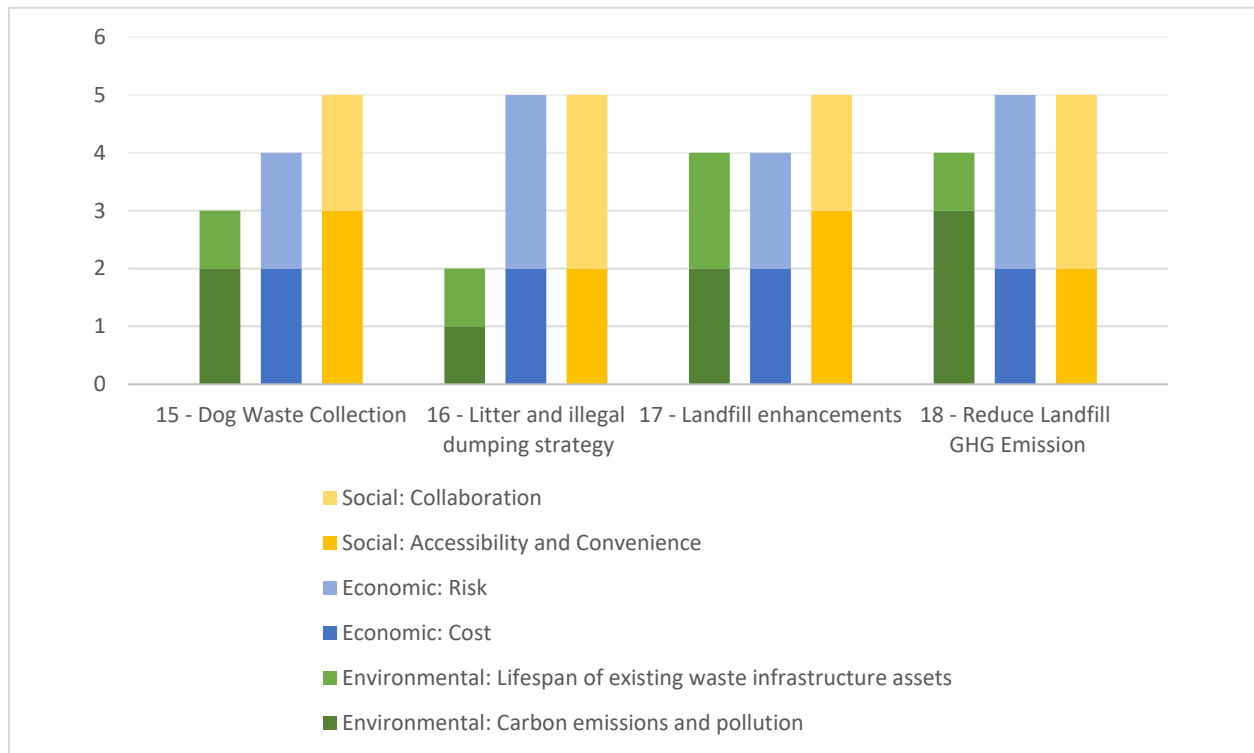
- The City would pilot a biofilter system at one landfill to assess offset in methane emissions.
- Location selected would need to be a closed landfill or a closed area of an active landfill with final cover placed.
- A consultant(s) would be hired to support construction and/or monitoring for a year.

- An amendment to the Environmental Compliance Approval may be required.
- Emission reductions will be measured and reported as part of CEEP actions.

Evaluation of Dispose Options

Figure 16 shows the results triple-bottom line evaluation of the **dispose** options. Each of the indicators (e.g., collaboration, accessibility and convenience, risk, etc.) could receive a maximum rank (or score) of three. With each category (i.e., environmental, economic, and social), the maximum rank is six. Thus, the longer the bar, the more favourable the option has scored in the evaluation.

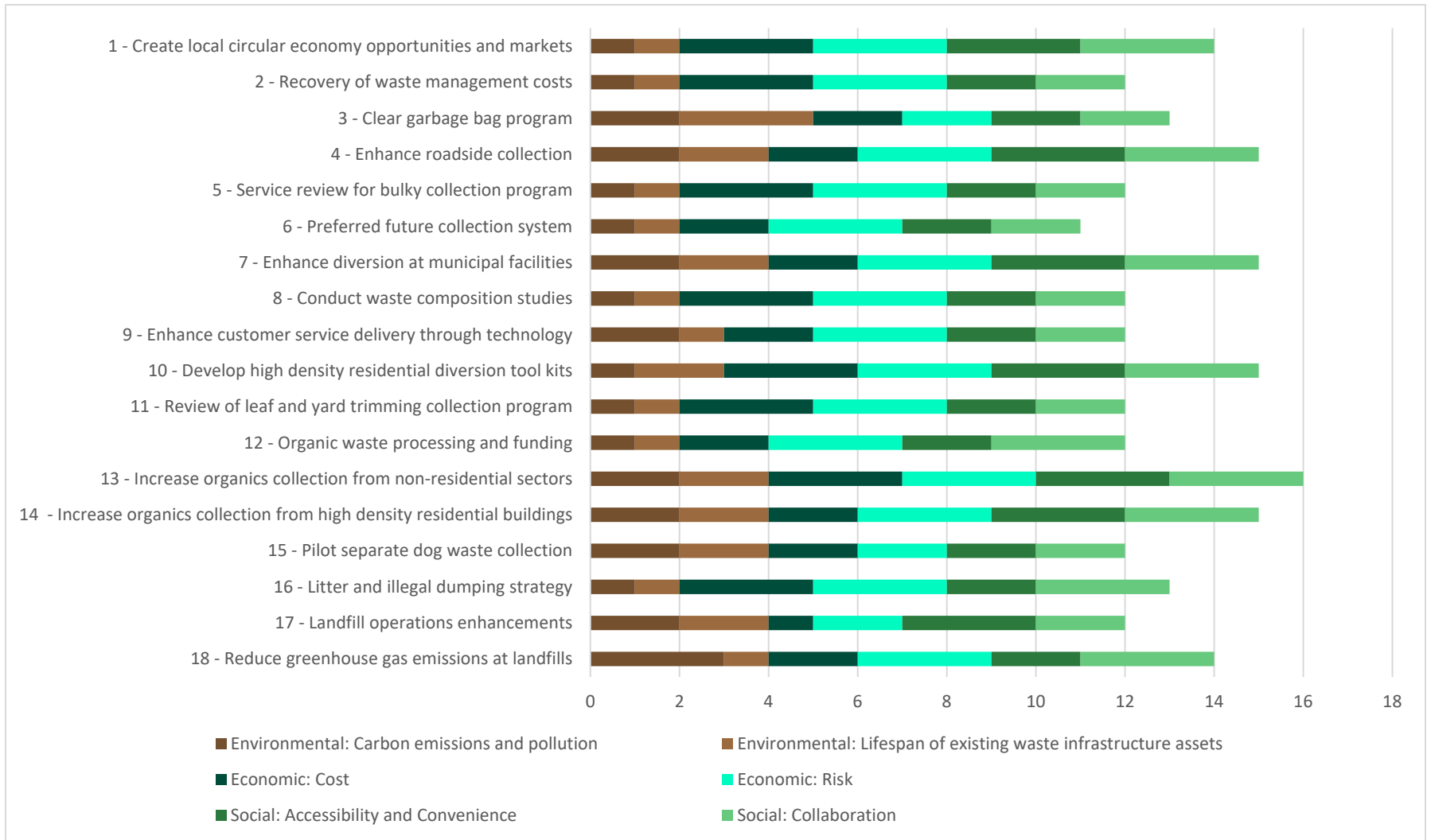
Figure 16: Dispose Options Evaluation



6.3.5 Summary of All Evaluation Results

Figure 17 shows the triple-bottom line evaluation of all 18 short-listed options. The maximum rank for each indicator is three and the maximum rank for each category (i.e., environmental, economic, and social) is six. The maximum total score for any option is 18. The longer the bar, the more favourable the option has scored in the evaluation. The 18 options evaluated below all received scores between 11 (Preferred Future Collection System) and 16 (Increase Organics Collection from Non-residential Sectors) out of 18.

Figure 17: Summary of Evaluation Results



6.4 Final Presentation of Options Evaluation

Internal engagement was an important part of the options evaluation, just as it had been during the process of refining the options (refer to **Section 4.1.1**).

Once the project team evaluated the options, the findings were presented to the TAC and SWAP in December 2023 for their input. This final Phase 3 report summarizes the outcome of internal feedback and was prepared for presentation of the OC at its meeting on March 25, 2024.

7 Funding Approaches

7.1 Introduction

As part of the SWS, Watson & Associates Economists Ltd. (Watson) undertook a review of the various options for funding approaches available to the City. Generally, municipalities have multiple funding sources for various solid waste management activities. These revenues typically include the sale of recyclable materials, IPR agreements/ stewardship funding, user fee funding, and other miscellaneous revenues. For the costs not covered by these revenues, the most common funding source is municipal property taxes. The following memorandum discusses the funding approaches the City may consider funding the remaining expenditures not covered by the non-tax revenues noted above.

Ultimately there are three approaches the City could take in recovering the net costs related to the waste management system, including, funding through taxes (current approach), a user rate, or a combination of taxes and user rates⁵. These three options are explained and evaluated further in this memo. Note that the City is currently undertaking a review of user fees for various waste management activities. Through this review, the City will determine if the current user fees are adequate to cover the cost of the activities to which they relate. User fees may recover the full cost of the activity to which they relate to reduce the net funding required from taxes or user rates. Alternatively, the City may consider implementing user fees that do not provide for full cost recovery based on market factors such as affordability. This review may also include new user fees to recover the costs of activities currently funded by property taxes (e.g., implementation of a gate-fee to offset the cost of recycling mattresses).

7.2 Overview of Funding Options

The City currently funds the work of Environmental Services through a combination of user fees, the sale of landfill gas, the sale of Blue Box recycling, IPR agreements/ stewardship funding, and other minor revenues, while property taxes are utilized to

⁵ User rates are distinct from user fees for the purposes of this memo. User fees relate to charges imposed on specific waste management activities (e.g. public waste drop-off), whereas user rates refer to one charge imposed on customers to recover the remaining net solid waste management costs. User fees are typically charged on a per usage basis, whereas user rates would be imposed and billed to customers on a monthly or annual basis.

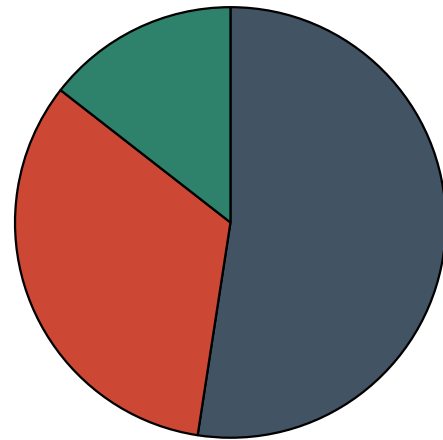
fund the remaining expenditures. Various funding options for the net costs to be recovered are reviewed through this exercise. These options are as follows:

1. Property Taxes (current funding approach);
2. User Rates; and
3. Partial User Rate and Property Taxes

The following provides a brief summary of each funding approach.

7.2.1 Property Taxes (current funding approach)

After the City recovers revenues from user fees, grants, etc. the remaining cost of the solid waste service is collected through property taxes. As noted in the SWS Future State report, the current funding approach provides that the solid waste service funds approximately 33.10% of the expenditures through user fees, 14.47% from other revenues, and approximately 52.43% (or \$14.85 million) from property taxes. The amount funded by property taxes equates to approximately 5.00% of the City's total property tax levy. This information is summarized in **Figure 18**.



7.2.2 User Rates

Rather than recovering the net expenditures from property taxes, the City may consider imposing a user rate on properties that receive waste management services. A user rate may be calculated in a number of ways:

- On a per customer basis (i.e., a per household flat rate);
- Based on the total tonnage collected (i.e., a rate for the total garbage, green cart, lead and yard trimmings, etc.);
- Based on the tonnage of garbage only;
- A separate rate for garbage and waste diversion streams;
- Based on the size of waste cart requested; etc.

Utilizing the current net expenditures to be funded, the user rate would be calculated to recover \$14.85 million. Currently, the City provides waste management services to over 70,000 households and manages approximately 135,000 tonnes of waste per year.

Utilizing these high-level figures, a user rate may be estimated at approximately \$212 per household annually or \$110 per tonne.

7.2.3 Partial User Rate and Property Taxes

The partial funding approach is a combination of the above two approaches whereby the net expenditures to be recovered would be collected partially through property taxes and partially through a user rate.

7.3 Evaluation of Funding Options

7.3.1 Evaluation Criteria

The following provides an evaluation of each funding approach against criteria to help the City reach its goals and targets. The above three funding options are evaluated based on the following considerations summarized below:

Table 6: Evaluation Criteria

Area of Consideration	Description
Waste Diversion	<ul style="list-style-type: none"> • How does the funding approach/policy encourage waste diversion? • Does the policy assist the City in reaching their waste diversion targets?
Revenue Stability	<ul style="list-style-type: none"> • Does the funding approach/policy allow for stability of revenues through an analysis of fixed vs. variable revenues? • Should City staff place a high priority on revenue stability, a greater share of the costs should be recovered through the fixed component of the charges?
Capital Improvements	<ul style="list-style-type: none"> • Does the funding approach/policy provide the City with the financial reserves (or debt financing ability) to undertake large capital improvements?
Fairness of Calculation	<ul style="list-style-type: none"> • It is important to consider that all parties should pay their fair share. Does the funding approach/policy provide for a fair approach to the calculation? For example, through property taxes, non-residential development pays towards waste management services as a whole, however, does this share of funding match the level of service provided?

Area of Consideration	Description
Economic Development and Affordability	<ul style="list-style-type: none"> • These principles should be considered when determining the appropriate funding mechanism as it is important to balance revenue generation with affordability. • The funding approach/policy should reflect the cost of the services provided, however, should not be so large that the citizens of the City will be negatively impacted.

7.3.2 Property Taxes (current funding approach)

Waste Diversion: The property tax funding approach does not encourage additional waste diversion behaviours from City residents. Residents are charged the same amount, regardless of the amount of waste they produce and dispose. This approach would not assist the City in increasing waste diversion participation, without additional or increased user fees on landfill activities.

Revenue Stability: The property tax funding approach is the most predictable and stable source of revenue of the three funding options. The City is guaranteed to collect revenues from taxes every year due to the funding approach being a fixed stream of revenues.

Capital Improvements: The property tax funding approach may provide the City with the financial reserves required to undertake large capital improvements, however, due to competing priorities, savings for future capital expenditures may be limited.

Fairness of Calculation: The property tax funding approach is the least equitable approach of the three options. As noted previously, residents are charged the same amount no matter the volume of waste produced. As such, some residents may be more conscious of the volume of waste they produce, while others may not. Additionally, non-residential properties and high-density properties (e.g., apartments, condominium buildings) pay taxes, including for waste management costs, which may not be equitable as collection and disposal of waste and divertible materials for non-residential properties are typically funded through the private sector.

Economic Development and Affordability: The property tax funding approach reflects the cost of waste diversion services provided by the City, however given the different behaviours of all residents, it may not be affordable for all. Additionally, annual tax rate increases are unfavorable and potentially unaffordable for City residents.

7.3.3 User Rate Funding

Waste Diversion: The user rate funding approach may encourage waste diversion for City residents, depending on the rate structure. If the rate structure provides a variable rate based on the amount of waste diverted, residents may reduce the amount of garbage they produce. This behaviour may assist the City in extending the remaining life of existing landfill sites as well as assist the City in increasing waste diversion participation.

Revenue Stability: The user rate funding approach is a less predictable source of revenue than the property tax approach if the rate imposed varies with the amount of waste collected. Residents would have greater control over their rate bill based on the volume of waste they produce. Initially the City may need to examine the behaviour of other municipalities' residents after introducing this approach, then monitor revenues in order to create a financial plan based on residents' behaviours related to waste diversion. Once implemented, the City may create a rate stability reserve fund to maintain cashflow when actual revenue is less than anticipated.

Capital Improvements: The user rate funding approach may provide the City with the financial reserves to undertake large capital improvements as this rate would be calculated separate from taxes. As such, similar to water and wastewater user rates, a financial plan may be created to incorporate anticipated capital improvements. Any unexpected capital improvement projects may need to be financed with debt.

Fairness of Calculation: The user rate funding approach may be more equitable than the property tax funding approach as it provides the City flexibility to impose the rate in a number of ways. The rate may be structured such that properties not receiving City services do not pay for collection and disposal or it may be structured to include a fixed and variable component. As such, residents would have more control to choose how much waste they divert, and thus how much they pay in user rates.

Economic Development and Affordability: The user rate funding approach may provide greater affordability. Depending on the volume of waste diversion the residents create, they have the control to make their rate affordable for their income and lifestyle. Non-residential properties may pay a smaller amount as compared to taxes as many currently pay for private collection and disposal costs. This would potentially provide some incentive for non-residential businesses to locate/remain in the City.

The user rate funding approach also allows for rate structures and adjustments to the calculations that may allow the City to incentivize certain types of development and disincentivize others based on the overall goals of the City.

7.3.4 Partial User Rate and Property Taxes

Waste Diversion: The partial funding approach may encourage waste diversion in residents depending on the structure. For example, if waste diversion programs were paid with property taxes and waste activities were recovered through a user rate, residents may be incentivized to reduce what they pay through user rates by diverting more waste. This approach may assist the City in reaching their future waste diversion targets. Additionally, it recognizes that waste diversion activities benefit the City as a whole, and as such, all waste diversion costs would be paid for by all properties in the City.

Revenue Stability: The partial funding approach would provide a slightly more stable and predictable method of revenue collection as compared to the full user rate approach. If the City chose a user rate that was variable based on tonnages, the property tax component would provide a fixed source of revenue, whereas the user rate component would vary. Similar to the user rate approach, the City would need to forecast anticipated revenues and monitor/update their financial plan overtime. Additionally, if the user rate is perceived as too high, commercial and high-density residential customers may choose private collection services, which would decrease revenues for the City.

Capital Improvements: The partial funding approach may provide the City with the financial reserves required to save for and undertake large capital improvement projects. The reserve funds may be funded through the collection of user rates to limit the impact on taxes.

Fairness of Calculation: The partial funding approach may be a moderately equitable funding approach, if the City chose to recover the costs of garbage from user rates. Only those that benefit from the collection and disposal of garbage would be a user rate (e.g. residential, as non-residential pays for private collection). If waste diversion was collected through property taxes, this portion of the costs would be paid by all properties, recognizing the benefit to the City as a whole.

Economic Development and Affordability: If the costs currently funded by the non-residential properties are placed on the residential user rate, it would result in an increase in fees imposed on residential properties. If the user rate for non-residential properties is less than the cost of private collections and the City offers non-residential collection services, this would provide for lower operating costs and may provide an incentive for businesses to locate/remain in the City.

7.4 Summary of Funding Options

Table 7 provides for a summary of the three different funding approaches evaluated based on various considerations for the City and its residents.

Table 7: Summary of Funding Approaches

Area of Consideration	Current Funding Approach - Property Taxes	User Rates	Partial User Rate and Property Taxes
Waste Diversion	May not be encouraged	May be encouraged (dependent on the rate structure)	May be encouraged (dependent on the rate structure)
Revenue Stability	Predictable and stable	Least predictable and stable	Moderately predictable and stable
Ability to Undertake Capital Improvements	Minimal desire to increase taxes for large improvements	Yes, through financial forecasting, however, any unexpected capital improvement projects may need reserve or debt funding	Yes, through financial forecasting, however, any unexpected capital improvement projects may need debt funding
Fairness of Calculation	Least	Most	Moderate
Economic Development and Affordability	Generally affordable under current amount funded. However, there is less flexibility / adjustable if significant increases in expenditures are anticipated.	An additional user rate may be unaffordable without a matching reduction in taxes. May reduce cost burden on non-residential properties.	An additional user rate may be unaffordable without a matching reduction in taxes. May reduce cost burden on non-residential properties

8 Next Steps

As described, Phase 3 “How to Achieve Goals” generated a long list of options for the future waste management system. The options are aligned with the vision, guiding principles and waste hierarchy, developed in Phase 2. The options are intended to increase diversion, maintain the City’s existing landfill assets, and enhance service delivery and operations over the next 10 years.

Phase 3 involved refining the long list through extensive internal and external consultation processes. In this phase, the evaluation criteria set out during Phase 2 were applied to the short-listed options to assess the social, environmental, and economic outcome of each one. The results of Phase 3 will be presented to the OC in March 2024.

Phase 4 “Develop SWS” is the final phase of the project. The SWS will be consolidated and finalized during this phase, and the options will be framed as actions to be implemented over the next ten years. Phase 4 will also include a final public survey to inform the public of the recommended actions and identify any major omissions.

Appendix A

Sudbury Options

		Option ID (#)	Option 1: Create local circular economy opportunities and markets	
Evaluation Criteria	Indicator	Scoring	Score	Rationale
Environmental	Reduces carbon emissions and pollution in the City and works towards achieving net-zero by 2050	1 (low) - Will result in little to no impact on carbon emissions and pollution	1	The workshops are not anticipated to reduce emissions and pollution.
		2 (medium) - Will result in moderate reductions to carbon emissions and pollution		
		3 (high) - Will result in significant reductions to carbon emissions and pollution		
	Increases the lifespan of existing waste infrastructure assets through the application of the waste hierarchy and waste diversion	1 (low) - Results in little to no impact on current waste infrastructure assets	1	The workshops are not anticipated to immediately result in increases in lifespan to existing waste infrastructure assets such as the landfill. Rather, they are intended as a first step in identifying circular economy opportunities in Sudbury. (This option has potential in the longer term to increase the lifespan of landfills as a result of promoting reuse.)
		2 (medium) - Moderate changes to increase lifespan of current waste infrastructure assets		
		3 (high) - Significantly increases the lifespan of existing assets		
Economic	Cost to the City	1 (low) - \$300,000 or greater capital or annual costs	3	Workshops will cost less than \$50,000.
		2 (medium) - \$50,000 to \$300,000 capital or annual costs		
		3 - \$50,000 or less capital or annual costs		
	Level of Risk	1 (low) - Very high risk (e.g., results, liability, environmental impacts, control by City)	3	Conducting workshops is a low risk activity. There is a potential that participants will have concerns and agendas that are not aligned with the City's engagement objectives. However, the City will need to establish and communicate workshop objectives. The City may also prepare responses (and educate staff) on appropriate responses to unsolicited proposals (e.g., technological solutions) or other asks of the City to participate or fund private sector initiatives.
		2 (medium) - Moderate risk (e.g., some risks but they can be mitigated)		
		3 (high) - Very low risk (e.g., good results, good for the environment, limited liability)		

		Option ID (#)	Option 1: Create local circular economy opportunities and markets	
Evaluation Criteria	Indicator	Scoring	Score	Rationale
Social	Accessibility and convenience (consideration of Northern Ontario residents, French-speaking residents, and First Nations communities)	1 (low) - Reduces accessibility and convenience	3	Once the City defines its objectives for the workshop series, consideration should be given to the organizations to invite. Circular economy outcomes often include economic development for small-medium enterprises, green-jobs, and support for social enterprises. Accessibility to waste management programs and services can be enhanced by strategically engaging with diverse community groups, organizations that can focus on job-creation, or other supports for equity-deserving groups.
		2 (medium) - Has no impact on accessibility and convenience		
		3 (high) - Increases accessibility and convenience		
	Collaboration (consideration whether the option supports strategic partnerships with other municipalities, local businesses, First Nations communities, environmental organizations, etc.)	1 (low) - Option poses reputational risks or other hindrance to collaborating with partners	3	
		2 (medium) - Option is neutral		
		3 (high) - Option provides opportunities for strategic objectives to be met by leveraging resources through partnerships		

		Option ID (#)	Option 2: Recovery of waste management costs		Option 3: Clear Garbage Bag program		Option 4: Enhance roadside collection		Option 5: Bulky collection program service review		Option 6: Preferred future collection system		Option 7: Enhance waste diversions at municipal facilities		Option 8: Conduct waste quantity and composition studies		Option 9: Enhance customer service delivery through technology		Option 10: Diversion tool kits for high density residential and ICI sector	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Environmental	Reduces carbon emissions and pollution in the City and works towards achieving net-zero by 2050	1 (low) - Will impact in little to no impact on carbon emissions and pollution	1	The option is to complete a study and therefore, no emissions will be generated.	2	The program is anticipated to increase the diversion of waste including food waste which would otherwise be landfilled and create methane gas. There is a potential for a temporary increase in illegal dumping initially.	2	While additional collection vehicles would be needed for textiles, GHGs from only one or two collections a year is not significant. This is also potentially offset by residents not having to drive their waste to depots. Increased reuse of textiles also has the potential to decrease GHG associated with new clothing.	1	As option relates to completion of a service review, there will be no impacts on carbon emissions and pollution. (Implementation of an option could see reductions in GHG emissions if collection approach is streamlined and/or increased reuse occurs at the roadside.)	1	Review has no effects on emissions. (It is anticipated that the future collection contract will require a fleet that generates less emissions than today and an automated system has the potential to increase efficiencies in collection.)	2	Establishing a consistent waste diversion program at municipal facilities is anticipated to generate some carbon and pollution reductions.	1	Conducting waste audit studies will not have a direct impact on carbon emissions. (It is noted that the data gathered will direct the City on where to focus efforts for new or enhanced programs to reduce the environmental impact based on how residents dispose of materials curbside.)	2	Route optimization has the potential to reduce GHG emissions.	1	Preparation and distribution of the tool kits is not anticipated to have a significant impact on carbon emissions and pollution.
		2 (medium) - Will result in moderate reductions to carbon emissions and pollution																		
		3 (high) - Will result in significant reductions to carbon emissions and pollution																		
	Increases the lifespan of existing waste infrastructure assets through the application of the waste hierarchy and waste diversion	1 (low) - Results in little to no impact on current waste infrastructure assets	1	The option is to complete a study and therefore, there will be no impacts of review on landfill capacity. (It is noted that the implementation of this option is anticipated to drive waste reduction and diversion efforts thus increasing the lifespan of existing assets.)	3	Diversion rates increased after the implementation of a clear bag program in other Cities.	2	North Americans dispose of up to 25 kg of textiles each year and of that only 15% is donated or recycled. Textile collection has the potential to greatly increase diversion and reduce the amount of waste going to landfill.	1	As option is a review, there will not be a direct impact on current infrastructure assets. (Implementation of an option could see diversion and reuse of bulky materials that consume high volumes of landfill space thereby increasing the lifespan of existing assets.)	1	Review has no effect on landfill capacity. (Full user pay has the potential to further increase waste reduction and diversion efforts which would increase the lifespan of existing assets.)	2	Establishing a waste diversion program at municipal facilities should, if implemented successfully, reduce the amount of materials going to landfill and therefore extend lifespan of existing assets.	1	Waste quantity and composition data alone will not have a direct impact on existing waste infrastructure. (This data can be used to support other waste diversion and reduction initiatives that may impact existing waste infrastructure.)	1	The option has the potential to increase compliance which could then result in a minimal increase in diversion. Increased diversion reduces the amount of waste going to landfill and extends capacity.	2	Increasing diversion from ICI and HDR properties has potential to decrease the weight of materials going to landfill and increase the lifespan of existing assets.
		2 (medium) - Moderate changes to increase lifespan of current waste infrastructure assets																		
		3 (high) - Significantly increases the lifespan of existing assets																		

		Option ID (#)	Option 2: Recovery of waste management costs		Option 3: Clear Garbage Bag program		Option 4: Enhance roadside collection		Option 5: Bulky collection program service review		Option 6: Preferred future collection system		Option 7: Enhance waste diversions at municipal facilities		Option 8: Conduct waste quantity and composition studies		Option 9: Enhance customer service delivery through technology		Option 10: Diversion tool kits for high density residential and ICI sector	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Economic	Cost to the City	1 (low) - \$300,000 or greater capital or annual costs	3	Cost of study is anticipated to be less than \$50,000	2	The costs associated with this option relate to initial planning, promotion and education activities, staff training, roll out and ongoing enforcement activities and are anticipated to be less than \$75,000.	2	Program implementation costs are required for a P&E campaign to launch the programs (approximately \$40,000). Ongoing operating costs are low and have potential to be offset by textile recycling organizations and/or producer responsibility organizations (batteries) (less than \$35,000).	3	The costs associated with conducting a service review are \$50,000 or less. The result of the option may include implementing a cost recovery mechanism (i.e., fee) or reducing costs through efficiency (i.e., routes). There is potential to reduce costs by coordinating the review with other waste collection service levels.	2	Costs for City staff and a consultant to complete the review are estimated to be approximately \$85,000.	1	One time costs are required for development and production of P&E materials. Ongoing operating costs include purchase and installation of containers, including program manager to oversee, and for staff training and increased education and enforcement for facility users. annually.	3	The costs for the City staff to plan, retain a consultant and manage data received is anticipated to be less than \$10,000. Once implemented, the annual cost is anticipated to be less than \$50,000 per year.	2	Initial costs to research and purchase equipment are estimated to be less than \$200,000. Ongoing operational costs relate to training and monthly licensing fees are anticipated to be less than \$50,000 annually.	3	Materials to be developed by City staff and consultant are anticipated to be less than \$50,000. Ongoing operational costs are anticipated to be less than \$10,000.
		2 (medium) - \$50,000 to \$300,000 capital or annual costs																		
		3 - \$50,000 or less capital or annual costs																		
	Level of Risk	1 (low) - Very high risk (e.g., results, liability, environmental impacts, control by City)	3	Low risk associated with completing the study. (It is noted that there may be opposition to findings from the study, depending on the outcomes.)	2	Initial risk of public acceptance of changing to clear bags, which can be mitigated through P&E. Requires training of collection operators for program to be effective.	3	City has experience in providing collection services for other programs. Providing additional convenience for a hazardous material is anticipated to reduce environmental liability at landfill sites.	3	The services review itself does not pose a risk to the City. The City has experience in providing collection services for other programs.	3	The completion of a review is a low risk activity.	3	The City is experienced in developing waste diversion programs at municipal facilities and therefore, this option is deemed a low risk activity.	3	Waste composition studies are a proven tool to gather data on waste collection programs.	3	Routing software is routinely used by municipalities across the country and this option looks to upgrade the system being used which will also support customer service inquiries.	3	Preparation of tool kit is a low risk activity.
		2 (medium) - Moderate risk (e.g., some risks but they can be mitigated)																		
		3 (high) - Very low risk (e.g., good results, good for the environment, limited liability)																		

		Option ID (#)	Option 2: Recovery of waste management costs		Option 3: Clear Garbage Bag program		Option 4: Enhance roadside collection		Option 5: Bulky collection program service review		Option 6: Preferred future collection system		Option 7: Enhance waste diversions at municipal facilities		Option 8: Conduct waste quantity and composition studies		Option 9: Enhance customer service delivery through technology		Option 10: Diversion tool kits for high density residential and ICI sector	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Social	Accessibility and convenience (consideration of Northern Ontario residents, French-speaking residents, and First Nations communities)	1 (low) - Reduces accessibility and convenience	2	Review itself has no impact to accessibility or convenience	2	No change in garbage collection service levels but requires residents to purchase clear bags which are assumed to be similar in price and available. Effective P&E and advance notice of the transition date will enable residents to use up black garbage in advance of the change.	3	Increases access for all households serviced by curbside collection to divert batteries and textiles.	2	The review itself will not impact accessibility and convenience. The purpose of the service review is to consider operations and customer service feedback to improve the program.	2	Review itself will have no impact on accessibility and convenience. (It is noted that maintaining or increasing accessibility and convenience will be considered as part of the review.)	3	Providing a consistent level of service for municipal facilities increases accessibility and convenience of waste diversion programs.	2	Has no direct impact on accessibility and convenience. (However, programs that may be improved or developed as a result of the results could increase accessibility and convenience.)	3	Customer service is part of the service that we deliver, wouldn't this be an increase accessibility through improved ability to provide customer service.	3	Increases accessibility by providing more information to additional customer types.
		2 (medium) - Has no impact on accessibility and convenience																		
		3 (high) - Increases accessibility and convenience																		
	Collaboration (consideration whether the option supports strategic partner with other municipalities, local businesses, First Nations communities, environmental organizations, etc.)	1 (low) - Option poses reputational risks or other hindrance to collaborating with partners	2	Engagement with internal City departments and customers may occur during the study.	2	P&E will be required to communicate changes to residents.	3	Potential for partnerships with both battery PROs and charities for textiles.	2	Option is neutral with respect to partnerships. There is a potential to partner with organizations that could reuse bulky materials.	2	The review itself may involve collaborating with other City departments and the waste management industry. (There is potential for partnerships with respect to the future state, for example any fueling station could be shared with other fleets, could be collaboration with in providing collection services.)	3	Establishing a waste diversion program at municipal facilities may have opportunities for partnerships with local organizations at events (e.g., sports tournaments) to become involved with supporting and encouraging positive waste habits.	2	Option does not impact collaboration opportunities.	2	Option focused on internal service optimization, however, can improve customer service issue resolution and contract management.	3	Provides opportunity for partnerships with HDR properties managers, superintendents, ICI sector and boards.
		2 (medium) - Option is neutral																		
		3 (high) - Option provides opportunities for strategic objectives to be met by leveraging resources through partnerships																		

		Option ID (#)	Option 11: Review leaf & yard		Option 12: Organic waste processing and		Option 13: Increase organics collection from		Option 14: Increase organics collection from high	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Environmental	Reduces carbon emissions and pollution in the City and works towards achieving net-zero by 2050	1 (low) - Will impact in little to no impact on carbon emissions and pollution	1	Minimal change to carbon emissions is anticipated. (A future outcome may be adjusting the number of collections which could lead to less emissions.)	1	Conducting a study will not have an impact on carbon emissions and pollution.) (It is noted this is a necessary step in order to identify how organics can be managed and whether the current composting facility is suitable for future use. A long term organics strategy to designed to accommodate future growth capacity could help reduce carbon emissions and pollution.	2	Improving waste diversion from the non-residential sector has potential to decrease organics to landfill and associated emissions.	2	Improving waste diversion from HDR buildings has potential to decrease organics to landfill and associated emissions.
		2 (medium) - Will result in moderate reductions to carbon emissions and pollution								
		3 (high) - Significant reductions to carbon emissions and pollution								
	Increases the lifespan of existing waste infrastructure assets through the application of the waste hierarchy and waste diversion	1 (low) - Results in little to no impact on current waste infrastructure assets	1	Removing grass clippings may reduce the amount of material being composted and improve composting operations. (If collection days can be reduced, there would be a lower demand on the collection fleet.)	1	Conducting the study itself will have no impact on the current waste infrastructure assets. (A review of the current aerobic composting facility and other potential organics technologies would help inform the City of the opportunities to expand processing capacity and reduce waste going to landfill, and increase capacity, if more food waste and organics were to be diverted to a new facility.)	3	Increased diversion of organics will help to increase diversion and extend existing assets.	3	Increased diversion of organics will help to increase diversion and landfill capacity as a result.
		2 (medium) - Moderate changes to increase lifespan of current waste infrastructure assets								
		3 (high) - Significantly increases the lifespan of existing assets								

		Option ID (#)	Option 11: Review leaf & yard		Option 12: Organic waste processing and		Option 13: Increase organics collection from		Option 14: Increase organics collection from high	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Economic	Cost to the City	1 (low) - \$300,000 or greater capital or annual costs	3	City staff time to undertake this review would be a low cost (less than \$20,000). Ongoing monitoring of the program is anticipated to be less than \$5,000 annually.	2	This option involves staff time and a consultant to complete the study. The total costs are estimated to be \$85,000.	3	The option involves City staff time to plan and prepare P&E materials. The costs are anticipated to be less than \$20,000. Ongoing monitoring of the program is anticipated to be less than \$10,000 annually. (Given the uncertainty about future processing methods, processing costs have not been included.)	1	Initial costs are for implementation planning, development of P&E materials and purchasing additional kitchen catchers which is estimated to be approximately \$65,000. Implementation costs are associated with distribution of kitchen catchers, outreach to customers and monitoring which are estimated to be \$10,000. (Given the uncertainty about future processing methods, processing costs have not been included.)
		2 (medium) - \$50,000 to \$300,000 capital or annual costs								
		3 - \$50,000 or less capital or annual costs								
	Level of Risk	1 (low) - Very high risk (e.g., results, liability, environmental impacts, control by City)	3	Very low risk associated with conducting this review.	3	Low risk associated with undertaking a study. (Findings will help to identify options, costs, risks and environmental benefits of expanding processing capacity.)	3	The City is experienced in delivering collection services to this sector.	3	The City is experienced in delivering collection services to this sector.
		2 (medium) - Moderate risk (e.g., some risks but they can be mitigated)								
		3 (high) - Very low risk (e.g., good results, good for the environment, limited liability)								

		Option ID (#)	Option 11: Review leaf & yard		Option 12: Organic waste processing and		Option 13: Increase organics collection from		Option 14: Increase organics collection from high	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Social	Accessibility and convenience (consideration of Northern Ontario residents, French-speaking residents, and First Nations communities)	1 (low) - Reduces accessibility and convenience	2	Education on the benefits of grasscycling will be required. The public may initially perceive this as a reduction in service however given it is a common practice in other jurisdictions, it is anticipated the negative impacts will be short lived.	2	No direct impact on accessibility and convenience for current organics program users. (Expanded capacity will increase accessibility for organics diversion from the HDR and ICI sectors and future population growth.)	3	Increasing availability of the organics collection program will increase accessibility for ICI locations not currently serviced.	3	Increasing availability of the organics collection program will increase accessibility for HDR locations not currently serviced.
		2 (medium) - Has no impact on accessibility and convenience								
		3 (high) - Increases accessibility and convenience								
	Collaboration (consideration whether the option supports strategic partner with other municipalities, local businesses, First Nations communities, environmental organizations, etc.)	1 (low) - Option poses reputational risks or other hindrance to collaborating with partners	2	Option has some potential for collaboration with environmental organizations to promote benefits of grasscycling.	3	The study would also explore potential interest and waste quantities from other municipalities or neighbouring communities, local businesses, First Nations communities for organics processing.	3	This option will consider new partnerships within the ICI sector.	3	Roll out of an organics program with HDRs would present opportunities for partnerships with this sector.
		2 (medium) - Option is neutral								
		3 (high) - Option provides opportunities for strategic objectives to be met by leveraging resources through partnerships								

		Option ID (#)	Option 15: Pilot separate dog waste collection		Option 16: Litter and illegal dumping strategy		Option 17: Landfill operations enhancements		Option 18: Reduce greenhouse gas emissions at landfills	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Environmental	Reduces carbon emissions and pollution in the City and works towards achieving net-zero by 2050	1 (low) - Will impact in little to no impact on carbon emissions and pollution	2	Diverting pet waste from landfill would reduce the associated methane gases that are produced when landfilled.	1	Strategy development itself will not impact emissions. (The Strategy may identify ways to better coordinate litter collection and reduce associated GHG emissions with more efficient collection.)	2	Reduced queuing and idling of vehicles on-site as a result of better traffic plan.	3	After landfill closure, methane production slowly decreases, typically over many decades. Passive methane biosystems are most suited to the period of time after there is insufficient methane concentration and volume to support a flaring system. These systems biologically break methane down to carbon dioxide, reducing its greenhouse gas equivalency by 25 to 80 times.
		2 (medium) - Will result in moderate reductions to carbon emissions and pollution								
		3 (high) - Significant reductions to carbon emissions and pollution								
	Increases the lifespan of existing waste infrastructure assets through the application of the waste hierarchy and waste diversion	1 (low) - Results in little to no impact on current waste infrastructure assets	1	This is pilot scale impact, should this be rolled out City-wide there may be moderate impact to waste infrastructure assets.	1	The strategy itself will not impact assets. (Development of litter strategy may improve diversion and decrease contamination in other waste streams by increased public awareness.)	2	Minor increase in lifespan for roads due to better flow of on-site traffic. Improve use of landfill space through compaction monitoring.	1	A pilot project would have a minor impact on existing waste infrastructure
		2 (medium) - Moderate changes to increase lifespan of current waste infrastructure assets								
		3 (high) - Significantly increases the lifespan of existing assets								

		Option ID (#)	Option 15: Pilot separate dog waste collection		Option 16: Litter and illegal dumping strategy		Option 17: Landfill operations enhancements		Option 18: Reduce greenhouse gas emissions at landfills	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Economic	Cost to the City	1 (low) - \$300,000 or greater capital or annual costs	2	Initial costs are associated with the purchase and installation of signage and receptacles (5) and development of P&E materials. Ongoing costs are associated with collection and processing for the duration of the pilot, and waste audits.	2	Costs for staff and consultant to develop the strategy is approximately \$50,000.	2	Changes to site layout will require some minor road construction at a minimum and will be upwards of \$50,000. Previous bin layout areas or bays will need to be removed/demolished to create lanes. Establishment of new bays/bins/drop off areas for public and commercial. Purchase of compaction monitors (3) and scalehouse software	2	Initial costs for City planning and engagement of MECP and consultant. Capital investment required for: initial surface emission monitoring, feasibility reporting, construction of biosystem pilot and is estimated at under \$200,000. Ongoing monitoring by a consultant estimated at \$70,000 annually.
		2 (medium) - \$50,000 to \$300,000 capital or annual costs								
		3 - \$50,000 or less capital or annual costs								
	Level of Risk	1 (low) - Very high risk (e.g., results, liability, environmental impacts, control by City)	2	A pilot program helps to identify and address risks for full scale roll-out of a program and develop an implementation plan and budget. Installation of underground bins will require planning and construction oversight.	3	Low risk to develop a litter strategy. (If implemented, the intent of the strategy is to have a positive impact to the environment.)	2	Low risk to finalize site redesigns. (When implemented, improvement of air and dust pollution on site due to better traffic flow. Improved safety due to segregation of public and commercial traffic.)	3	Low risk passive system which reduces methane to carbon dioxide.
		2 (medium) - Moderate risk (e.g., some risks but they can be mitigated)								
		3 (high) - Very low risk (e.g., good results, good for the environment, limited liability)								

		Option ID (#)	Option 15: Pilot separate dog waste collection		Option 16: Litter and illegal dumping strategy		Option 17: Landfill operations enhancements		Option 18: Reduce greenhouse gas emissions at landfills	
Evaluation Criteria	Indicator	Scoring	Score	Rationale	Score	Rationale	Score	Rationale	Score	Rationale
Social	Accessibility and convenience (consideration of Northern Ontario residents, French-speaking residents, and First Nations communities)	1 (low) - Reduces accessibility and convenience	3	The option provides increased convenience and accessibility to the pilot areas as residents would not need to walk pet waste home.	2	Strategy development should not impact accessibility or convenience.	3	Increases convenience onsite with new scalehouse software. (When implemented, there will be improved traffic flow making access to the site more convenient.)	2	Has no impact to accessibility or convenience.
		2 (medium) - Has no impact on accessibility and convenience								
		3 (high) - Increases accessibility and convenience								
	Collaboration (consideration whether the option supports strategic partner with other municipalities, local businesses, First Nations communities, environmental organizations, etc.)	1 (low) - Option poses reputational risks or other hindrance to collaborating with partners	2	There is some potential to collaborate with other City departments and potentially for a company to manage the collected pet waste.	3	Potential to engage other City departments and local businesses that contribute to litter (e.g., fast food restaurants, community interest). Opportunities to engage local non-profit organizations, service groups and volunteers interested in community clean-ups and protecting the environment.	2	No reputational risks involved or opportunities for collaboration	3	Potential collaboration with local institutions (e.g., Laurentian University) for a research project.
		2 (medium) - Option is neutral								
		3 (high) - Option provides opportunities for strategic objectives to be met by leveraging resources through partnerships								