

5.0 RECOMMENDATIONS

5.1 OPTIMIZE DIVERSION STREAMS

Improving waste collection efficiency can lead to cost savings and a reduced environmental impact. Here are some recommendations for increasing waste collection efficiency:



Optimize Bin and Signage Placement



Right Size Waste Bins



Explore Technology Solutions



Evaluate Hauler Contracts



OPTIMIZE BIN AND SIGNAGE PLACEMENT

- Place waste bins strategically to maximize convenience for employees. Ensure that recycling and compost bins are easily accessible (e.g., no hard-to-open lids) and well-marked to promote proper waste disposal.
- Instead of having waste bins standing alone, make sure all waste-to-landfill disposal locations are also accompanied by diversion streams. This will encourage source separation practices.
- If the contamination rate is high and/or capture rates are low, consider optimizing signage locations by placing them where employees and/or visitors frequent, such as in elevators and washrooms.



RIGHT SIZE WASTE BINS

- Match the size of waste bins to the volume of waste generated in specific areas. Right-sizing bins can prevent unnecessary collections and reduce costs associated with waste removal.
- By continuously monitoring the waste bins before collection, it can be determined whether the bins are full on collection day.



EXPLORE TECHNOLOGY SOLUTIONS

- Consider implementing smart waste management solutions that use sensors to monitor fill levels in front-end waste bins. This technology can optimize collection routes and timing, reducing unnecessary pickups.
- Waste Solutions provides smart sensors as a value add for our clients to ensure the highest level of efficiency for material collection. For more information follow this link: <https://waste.solutions/technology/smart-sensors/>

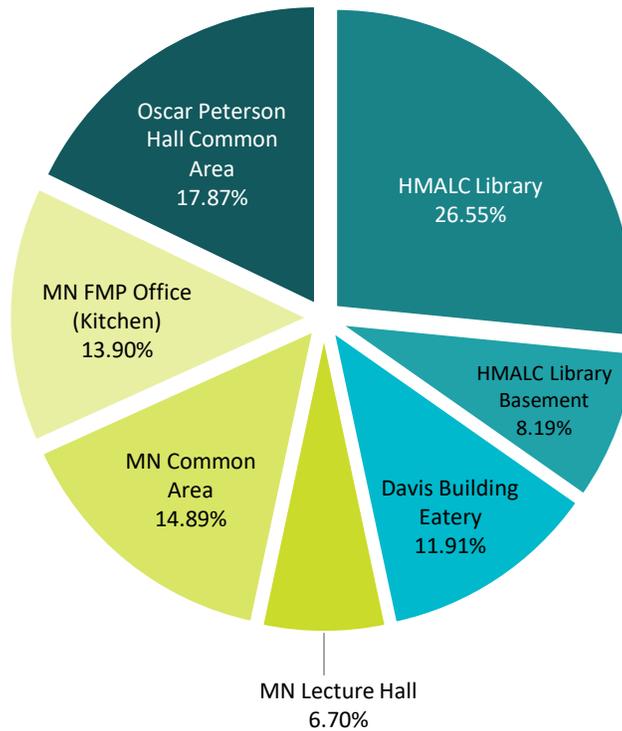


EVALUATE WASTE HAULER CONTRACTS

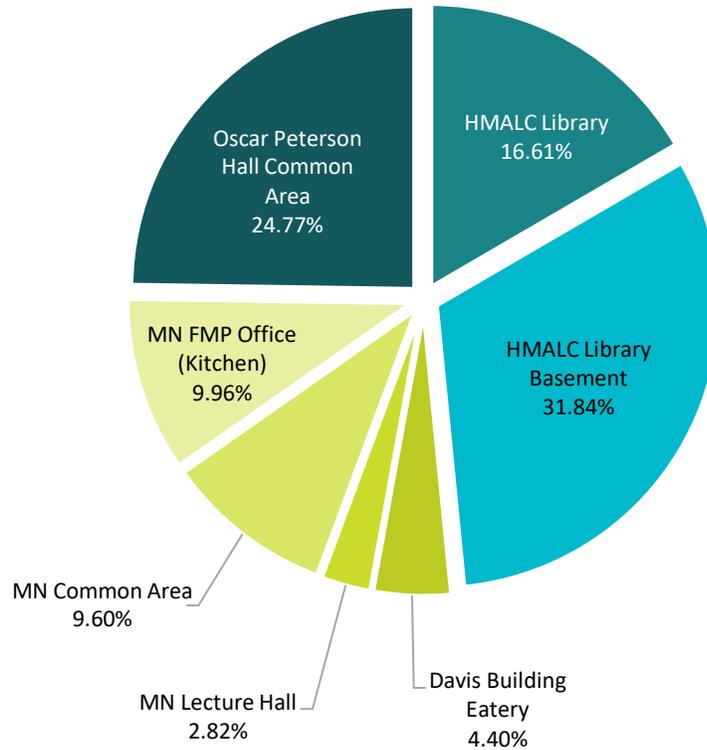
- Regularly review and negotiate waste hauling contracts to ensure they align with the specific needs of UofT Mississauga. Look for opportunities to optimize costs and services based on changing waste generation patterns.
- Waste Solutions provides this service for our clients to find ways to improve the sustainability of waste management practices onsite while reducing costs. Please visit the following link if you are interested in an assessment of your current hauler contract: <https://waste.solutions/get-started/>

AREA SPECIFIC ANALYSES

While the audit team was onsite, they observed recycling in the waste-to-landfill stream, accounting for **12.89%** of the total waste being sent to landfill onsite, despite having a recycling program operating onsite accepting these divertible materials. The chart below displays the percentage of recyclables that each area is discarding into the waste-to-landfill stream annually.



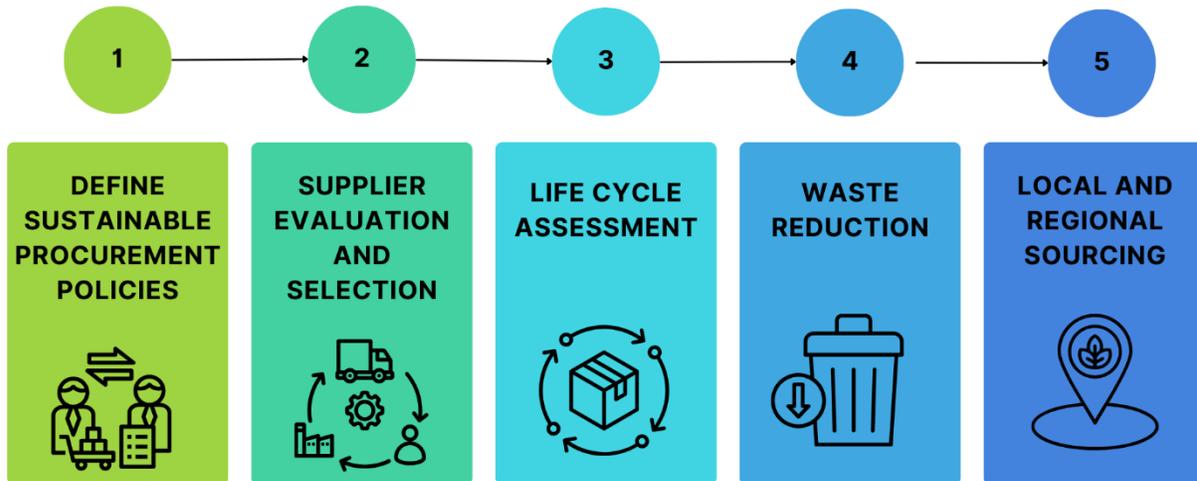
In addition, compostable materials accounting for **47.38%** of the total waste being sent to landfill onsite, despite having a composting program operating onsite accepting these divertible materials. The chart below displays the percentage of compostable materials that each area is discarding into the waste-to-landfill stream annually.



Therefore, it is recommended that the areas with the highest levels of divertible materials within their waste-to-landfill streams are specifically targeted to analyse the bin placement. As previously mentioned, by making sure all waste-to-landfill disposal locations are also accompanied by diversion streams, this will encourage source separation practices by employees onsite. When the waste-to-landfill stream is easier to access than diversion streams, this leaves little incentive for employees to divert materials.

5.2 REDUCE WASTE GENERATED ONSITE

Implementing sustainable procurement practices at UofT Mississauga can significantly contribute to reducing the waste onsite and increasing environmental responsibility and social impact. Here are some recommendations for adopting sustainable procurement practices:



1. DEFINE SUSTAINABLE PROCUREMENT POLICIES

- Develop and implement clear sustainable procurement policies that prioritize environmentally friendly, ethically sourced, and socially responsible products and services.
- For example, some materials have a lower environmental impact, such as materials with recycled content, biodegradable materials, or those sourced from a sustainable renewable source.



2. SUPPLIER EVALUATION AND SELECTION

- Evaluate and select suppliers based on their environmental and social performance. Consider factors such as their commitment to reducing carbon emissions, use of eco-friendly materials, and fair labor practices.
- Conducting a pilot program can test the performance of materials, ensuring they meet the standards of durability protection and other functional requirements.



3. LIFE CYCLE ASSESSMENT

- Conduct life cycle assessments of products and services to understand their environmental impact from production to disposal. This can help in making informed decisions about the sustainability of different options.
- A free life cycle assessment tool for beginners: <https://www.openlca.org/>



4. WASTE REDUCTION

- Opt for products with minimal packaging or those using recycled and recyclable materials. Encourage suppliers to adopt waste reduction practices and consider packaging waste in the procurement decision-making process.
- By using the results of this audit as a baseline for improvement, reduction targets can be implemented. Goals should be measurable, achievable, relevant, and time bound for reduction of waste. For example, setting a specific goal of reducing the overall waste of packaging by a certain percentage within a specific timeline.
- Consider the use of biodegradable or compostable materials for packaging. These materials break down naturally and can be accepted into specialized composting programs.



5. LOCAL AND REGIONAL SOURCING

- Give preference to local and regional suppliers to reduce the environmental impact of transportation and support the local economy. This can also enhance relationships with nearby businesses.
- Fostering collaboration with suppliers and engaging stakeholders at various levels enables your organization to create a more inclusive and impactful approach to sustainable procurement and ensures that all key participants in the supply chain are aligned with your organization's environmental goals.

SITE-SPECIFIC ANALYSES

While onsite, the audit team observed some low hanging fruit for waste materials that can be reduced through sustainable procurement and waste reduction efforts. These include packaging, paper towels, plastics and coffee cups observed onsite. The materials and annual weights are listed in Table 8 below.

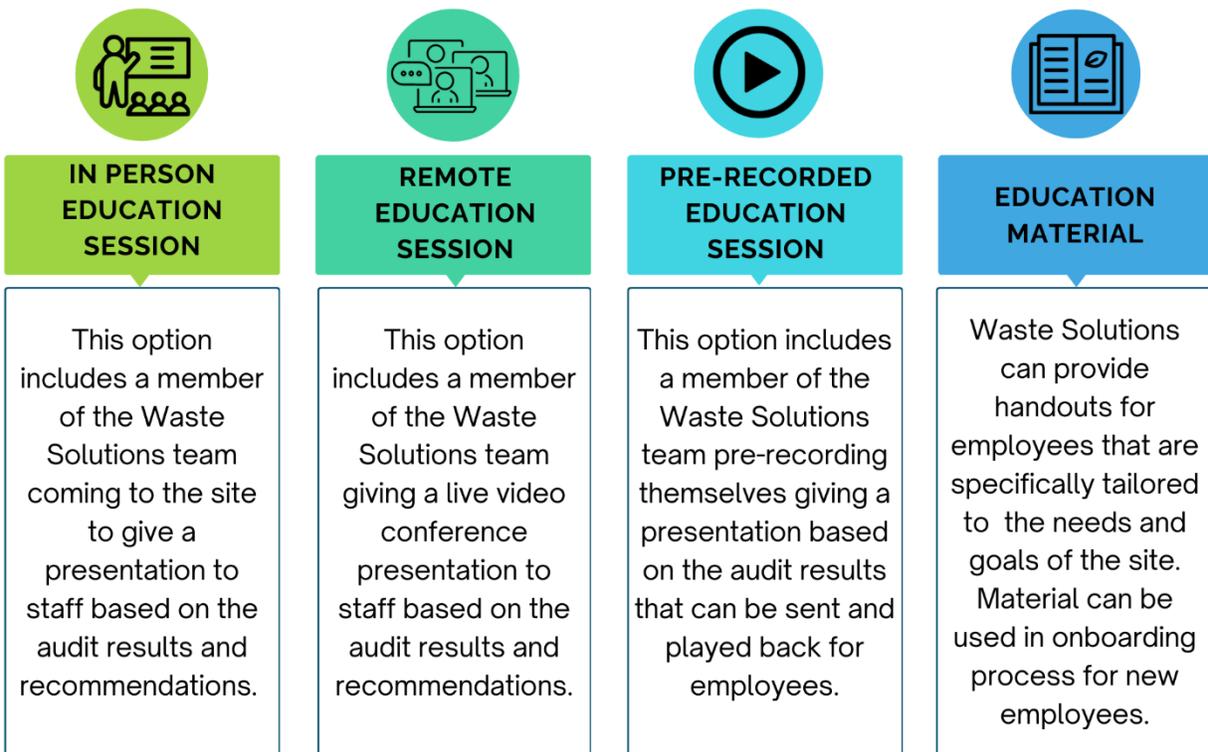
Table 8. Annual amount of waste materials sent to the landfill.

WASTE MATERIAL	ANNUAL AMOUNT SENT TO LANDFILL (KG)
PET (#1)	16,802.28
HDPE (#2)	212.69
LDPE (#4)	425.37
PP (#5)	43,388.18
PS-C (#6)	4,041.06
Food Waste	285,851.52
Tissue/Paper Towel	20,417.97
Disposable Food Packaging	227,575.24
Coffee Cups	26,585.89
Tissue Toweling	20,417.97
Non-Recyclable Packaging	1,063.44
TOTAL	646,781.59 kg

5.3 EMPLOYEE EDUCATION AND ENGAGEMENT

5.3.1 EDUCATION OPPORTUNITIES

Waste Solutions recommends that UofT Mississauga provide employees with a waste education session. Waste Solutions are experts in waste and can provide educational materials to improve the company culture around waste management as well as give a better understanding of the importance of sustainable waste disposal practices. The options Waste Solutions provides are listed below:



If you are interested in one of the options listed above, please contact the Waste Solutions team at the following address: wasteaudit@waste.solutions to get started on your journey towards a more sustainable culture within UofT Mississauga.

5.3.2 IMPLEMENTING SIGNAGE

The easiest way to engage staff in diversion programs is to clearly communicate the acceptance criteria of these programs through clear signage accompanying waste receptacles. The benefits of implementing waste signage onsite are listed below.



Reduced Contamination



Enhanced Diversion Rate



Potential Cost Savings



Adaptability to Multilingual Environments



REDUCED CONTAMINATION

- **Proper Disposal Guidance:** Clear waste signage helps prevent contamination of recycling and composting streams by guiding users on what items are accepted in each bin. This improves the quality of recycled and composted materials.



ENHANCED DIVERSION RATE

- **Promoting Recycling:** Informative waste signage encourages individuals to participate in recycling programs by clearly indicating which items are recyclable. This can lead to increased recycling rates within a community, workplace, or public space.



POTENTIAL COST SAVINGS

- **Efficient Waste Collection:** Proper waste signage contributes to efficient waste collection processes, reducing the time and resources required for sorting at later stages. This can result in cost savings for waste management operations.



ADAPTABILITY TO MULTILINGUAL ENVIRONMENTS

- **Inclusivity:** Multilingual friendly waste signage accommodates diverse populations, ensuring that individuals who speak different languages can understand and follow proper waste disposal procedures. This includes the use of pictures and graphics to convey the message.

Waste Solutions can curate specific signage for the site, which will increase the employee understanding of the waste management practices onsite. Examples of waste signage include:



Please contact Waste Solutions at wasteaudit@waste.solutions if you are interested in learning more about these additional services.