



# WASTE AUDIT

LAURIER MACDONALD  
HIGH SCHOOL

8TH FEBRUARY 2024

## About enuf

*enuf* is a B-Corp whose mission is to do whatever it takes to solve the waste crisis. We work for cultural change in two interrelated ways: by helping to build better infrastructure for waste sorting and organics collection, and by running education and awareness campaigns in institutions and with the public. We work with cities, businesses and schools at all levels, and are involved in social mobilization in partnership with community organizations.







*enuf* is co-founded by three equal partners: one woman and two immigrant people of colour. We benefit greatly from a broad range of diverse perspectives within our team. We have recently become a “Benefit Corporation” (B Corp), which we pursued to ensure that we are anchoring our organization in sustainability best practices from the get-go. For example, our legal incorporation articles include the following text to ensure that executive officers can make decisions for social good, even if such decisions do not maximize profit, without being liable to shareholders:

“The purpose of the Company shall include, but is not in any way limited to or restricted by, the creation of a positive impact on society and the environment, taken as a whole, from the business and operations of the Company, which impact is material in view of the size and nature of the Company’s business”.






## Introduction:

The enuf team has conducted the following audits and activities at the Laurier McDonald High School:

-  March 25<sup>th</sup>, 2022: Preliminary waste audit
-  October 18<sup>th</sup>, 2022: Train the student green team to act as ambassadors during lunch time to help their fellow students with waste sorting.
-  November 1<sup>st</sup>, 2022: Provided school-wide educational workshops on waste sorting that were attended by over 615 students and 30 staff.
-  January 20<sup>th</sup>, 2023: Follow-up waste audit to assess effectiveness of educational activities.
-  November 28<sup>th</sup>, 2023: Waste-sorting workshops only to new students.
-  February 8<sup>th</sup>, 2024: Waste audit

The audit data from 2022 and 2023 was provided in a previous report, and here we provide the 2024 audit data, highlighting the progress relative to previous data.

The objectives of the work conducted by *enuf* are:

-  Monitor the long-term progress of waste-sorting since the previous audits and education workshops in 2022 and 2023.
-  Identify opportunities to improve waste reduction and diversion.
-  Identify non-compliance in waste disposal to inform educational efforts.

## Waste audit process summary:

The *enuf* auditors separated items into containers for each of the following waste streams:

- 1) Paper (including cardboard),
- 2) Plastics,
- 3) Metals,
- 4) Organic waste,
- 5) Trash.

## Waste audit parameters:

*enuf* is committed to providing the best quality of waste audit for the best price. Our processes adhere to general waste audit guidelines. The amount of waste generated allowed *enuf* to conduct a full waste audit of the recycling and compost streams. However, for the landfill trash bins, a sample size of one 360 L bin out of four total 360 L bins was audited as a representative of the sample size. These parameters give us a high confidence in the representativeness of our data and analysis.

We were able to conduct a thorough and deep assessment of the waste sorting conditions, where we went through 3 days' worth of recycling, trash and compost, totalling **153.7 kg** of audited waste. On average, each person generated **105 g** of waste per day, assuming a **725** population of students and staff, at *Laurier McDonald High School* and a population of **337** students and staff at the **vocational centre**.



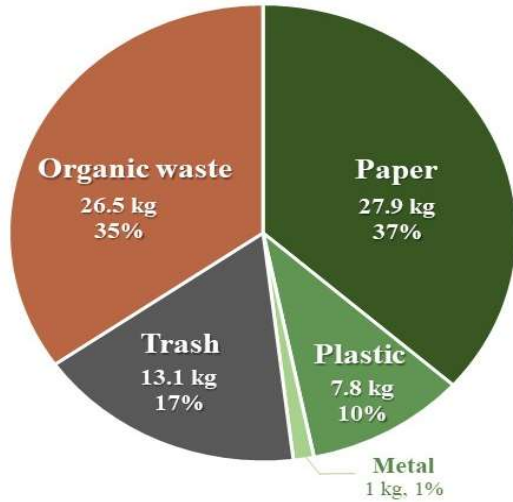
## Current state:

In this audit, the total weight of waste captured in recycling bins in the audited three days is **103.7 kg**. The total weight of waste captured in the compost bin in the audited three days was **25.0 kg**. As for the total weight of waste captured in landfill bins, a sample size of 1 360 L bin was audited to represent the total 4 full 360 L trash bins. Thus, taking the 25.1 kg weight of the sample size, the total weight of trash in the audited three days was scaled by volume to be **100.2 kg**. The composition of the audited waste is shown in **Figure 1**, alongside the overall waste composition from previous waste audits.

Both the percentage and absolute weight of trash generated per day have decreased year over year, reaching **17%** and **13.1 kg** in the latest audit in 2024, down from **28%** and **25 kg** in 2022. This consistent decrease in the generated trash is a testament to the waste reduction initiative the school has been making in replacing non-divertible trash with recyclable or reusable items.

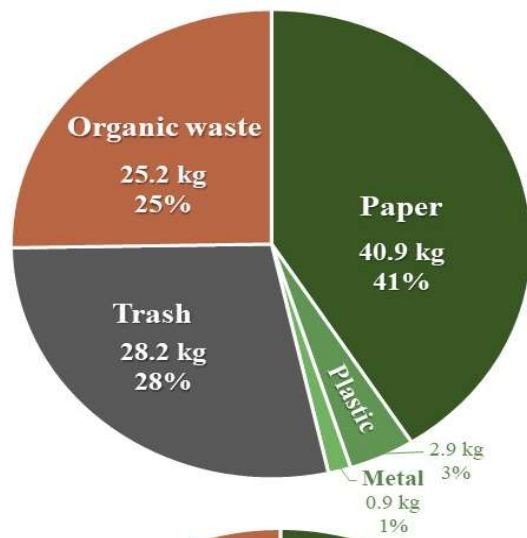
The largest two categories of waste remain paper and organic waste, at **37%** and **35%**, respectively. Thus, waste reduction and diversion efforts are best placed targeting the correct sorting of these two categories. In fact, the amount of paper has over tripled from **11%** to **37%** since the initial 2022 audit. Identifying major sources of paper alongside reduction efforts like digitisation can lower the overall waste being produced. Lastly, the amount of organic waste reduced from its initial contribution of **~51%** in 2022, to just **35%**.





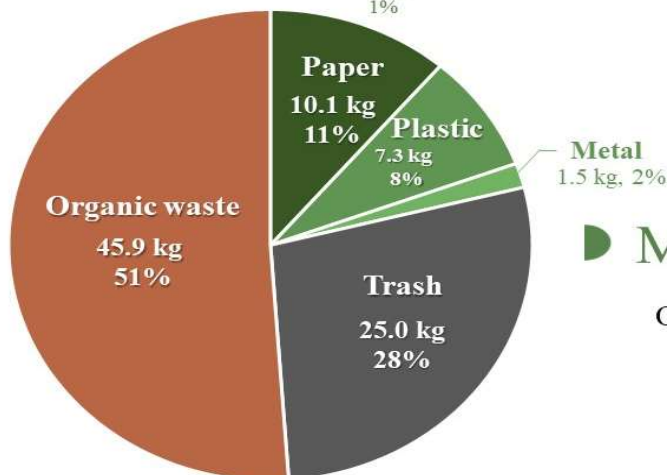
## February 2024

Overall waste per day:  
**76.3 kg**



## January 2023

Overall waste per day:  
**70.7 kg**



## March 2022

Overall waste per day:  
**89.7 kg**

**Figure 1: Overall composition of audited waste on Feb 2024, Mar 2022, Jan 2023, normalised per day.**

**Takeaway:** The two largest components of the waste generated are 1) **Paper** (and cardboard) which can be **reduced**, and 2) **organic waste** which can be **composted**.



## Contamination:

**Figure 2** shows the composition of waste in the recycling, compost and landfill streams, alongside previous audit data. The compost bins remained virtually pure, with no contamination since their rollout.

About **18%** of the waste in the recycling bins isn't actually recyclable, with 16% of this contamination being from unrecyclable plastics, suspectedly from the vocational centre as they included non-schooling items such as hair dye kits. This is double the contamination that was found in the 2023 audit, but still less than the **23%** contamination in the initial pre-education audit in 2022. Extending educational training to the vocational centre would help reduce misplacement of plastics, and improve the consequential contamination rates. This might also help improve the rate of recyclable plastic contamination in the trash bins, where cardboard boxes and recyclable plastics were also suspected to have come from the vocational centre.

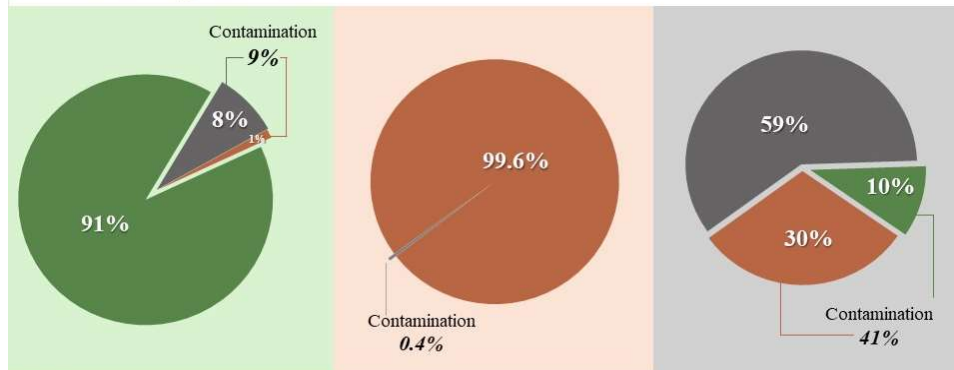
Strikingly, only **23%** of the waste in the sample of landfill bins was trash. Over half (**52%**) of what *Laurier McDonald High School* sends to landfills is **organic** and should be **composted** instead. This organic contamination in trash bins is at a higher rate than the **30%** observed in the 2023 waste audit, but remains less than the **60%** observed in the preliminary audit in 2022. A major source of this organic contamination was paper towels and tissues. Given that compost bins are already available, and are hardly ever contaminated, the placement and accessibility of compost bins in classrooms, hallways as well as the cafeteria should be assessed. Further, the presence of recyclable plastics in the trash bins (**25%**) more than doubled compared to both previous waste audits (**10%**), resulting in an overall higher contamination rate for trash waste.



## February 2024



## January 2023



## March 2022

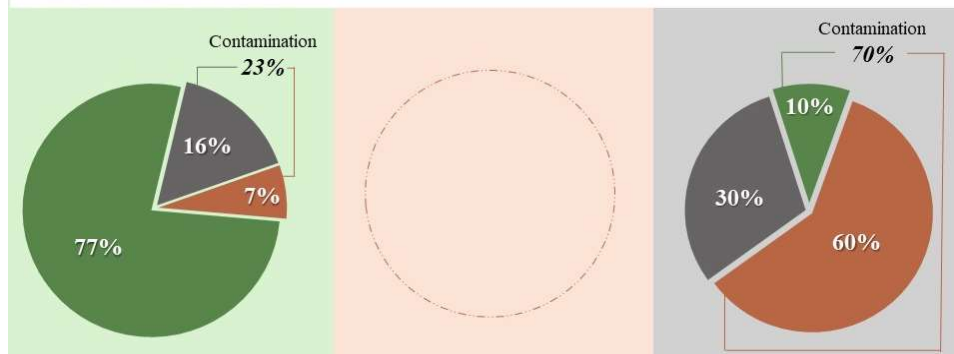


Figure 2. Composition of the recycling, compost and landfill bins Feb. 2024, Jan. 2023, Mar. 2022.

**Takeaways:** 1) Compost bins remain pure! 2) Contamination increased in recycling and trash streams relative to the 2023 audit. 3) Over half (**52%**) of what *Laurier McDonald High School* sends to landfills is **organic** and should be **composted** instead



## ► Capture rate

Whilst less than 20% of the audited waste produced is indivertible and headed for landfill, the capture rates of materials in the correct stream can hinder potential diversion. **Figure 3** shows the capture rate, normalised per day, of the different waste streams in all audits conducted at **Laurier McDonald High School**. Most recently, about **78%** of all recyclable material was captured in the recycling bin. This is a drop from the **91%** observed in 2023, but remains higher than the **59%** observed in the 2022 pre-education audit.

Paper and cardboard continued to have the highest capture rate at **89%**. This is slightly less than the previously reported **95%** in 2023 and 2022. The capture rate of recyclable plastics nearly halved from **79%** in 2023, to **41%** in this recent 2024 audit. This mostly arose from recyclable plastics, namely bottles, being put in the trash bin instead of being emptied, rinsed and recycled. Additionally, recyclable plastic hair dye bottles and other materials suspected from the vocational centre were also misplaced in trash bins as opposed to recycling.

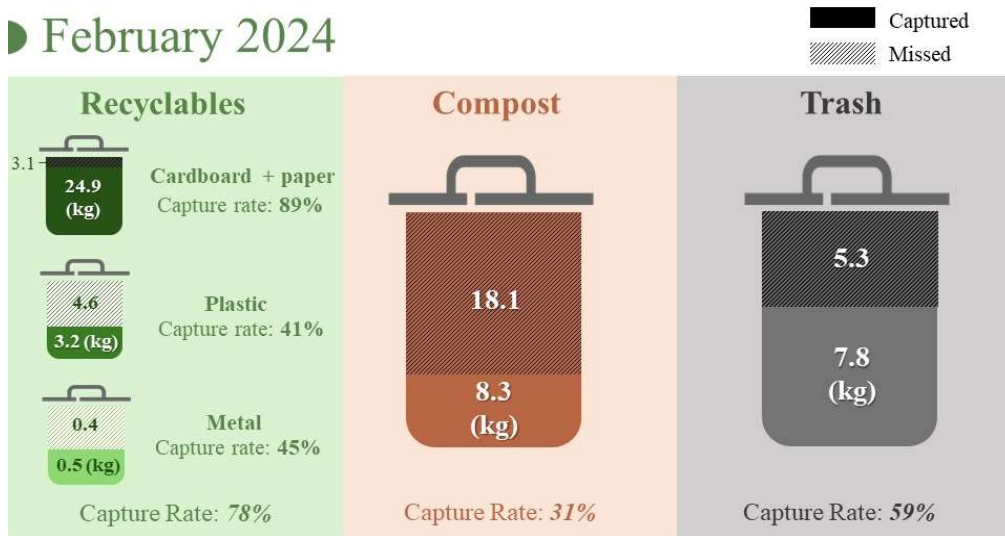
Furthermore, the lowest capture rate (**31%**) was seen with compost, with nearly **70%** of organics going to landfill trash bins instead. This is a decrease from the **51%** observed in 2022. Finally, only **59%** of trash was collected in the landfill bins mostly due to non-recyclable and contaminated plastics being misplaced in the recycling stream.

The mixed results in the contamination and capture rate data points to the need for consistently widespread education including refreshers for older students who have attended previous workshops. Only new students attended the latest round of waste-sorting workshops, and the students in the vocational center did not attend any of the workshops. As such, we recommend that the next round of waste sorting workshops be attended by all students.





## February 2024



## January 2023



## March 2022



**Figure 3: Capture rates of different waste streams.**

**Takeaway:** Low capture rates for compost and recyclable plastics and metal



## ► Recommendations:

- 1) Ensure that all students attend the waste sorting workshops, including:
  - a. Older students who attended workshops in previous years. This will serve as a refresher.
  - b. Vocational centre.
- 2) Identify major sources of paper and target them with reduction efforts such as digitization and reuse initiative for school supplies.
- 3) Continue annual training to the school student green team to act as ambassadors during lunch time to help their fellow students learn how to sort their waste.
- 4) Continue annual waste audits, and school-wide waste sorting education workshops.
- 5) Consider conducting 5-min refreshers on waste sorting in the winter semester after the return from Christmas holidays.
- 6) Communicate the progress reported in this report to BoG, staff, students and external community to sustain community engagement and buy-in.

