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Green Workplace Consulting

Solid Waste and Recycling Assessment

SAMPLE REPORT



NOTE: This report has been designed to provide a general idea of the detailed information that our assessments provide. Some sections have been omitted.

1. Executive Summary

Introduction

This assessment was conducted to determine the contents of the solid waste and recycling streams for the Head Office at 123 Main Street, Vancouver, BC. In presenting a categorical analysis of this facility’s waste, this report provides the necessary information to understand missed or underused recycling and waste diversion opportunities.

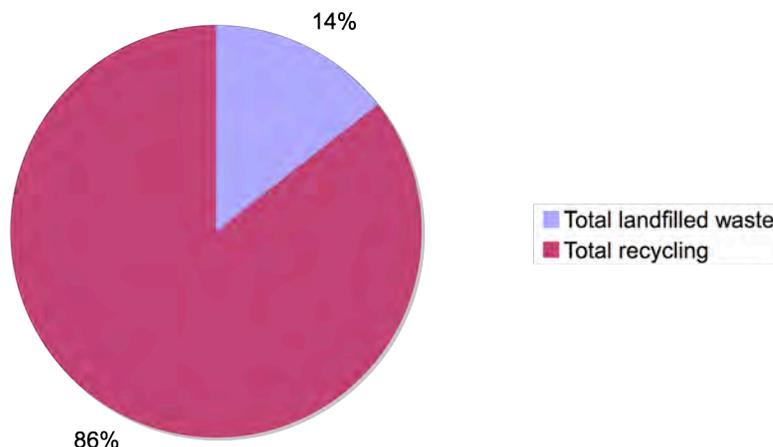
Areas of solid waste analysis provided in this report include:

- Annual waste diversion rate
- Annual recyclables capture rate
- Greenhouse gasses emitted through solid waste generation and missed diversion opportunities
- Greenhouse gas emissions saved by successfully diverting recyclable materials
- Annual extrapolation of each waste stream category (by mass)
- Recommendations for enhancing waste reduction and diversion strategies

Key Findings

- The **diversion rate of this facility is 86%**. This is to say that 86% of the waste generated by this facility is being successfully diverted from landfill each year
- The capture rate of this facility is 97%. This is to say that 97% of all recyclables generated by this facility are being successfully captured for recycling
- Greenhouse gas emissions from landfilled waste are 6.92 tonnes per year
- The estimated greenhouse gas savings from recycling is found to be 111.94 tonnes per year

Building Diversion Rate





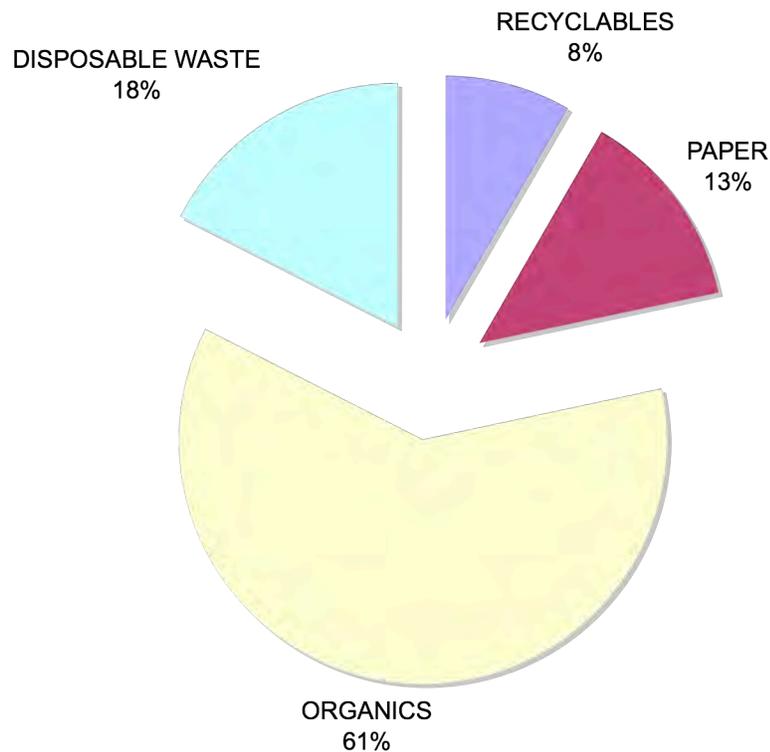
4.2 Detailed Breakdown of Waste Sent to Landfill

Both the recyclables AND the disposable waste quantified in Table 4.1 were found in the WASTE bin. Therefore every recyclable item quantified in Table 4.1 has the opportunity to be diverted from the waste sent to landfill. If composting becomes available, all of the organic waste could also be diverted from landfill.

The following pie chart illustrates the breakdown by general category of the landfilled waste at this facility, using data from Table 4.1 (Sub-total rows)

Figure 4-1 Overall Categorical Breakdown of Landfilled Waste

In the following figure recyclables include all sub-categories in the recyclable category in Table 4.1. The same applies to the categories Paper, Organics and Disposable Waste.





5. Greenhouse Gas Emissions (GHG)

5.1 Greenhouse Gas Emissions of Recycling and Landfilled Waste Streams

Table 5.1 GHG Emissions PRODUCED from Landfilled Waste

Item	Quantity Landfilled	GHG Emissions from landfilling	GHG Emissions from raw materials extraction	Total GHG emissions
	(tonnes / year)	(tonnes CO ₂ e/year)	(tonnes CO ₂ e/year)	(tonnes CO ₂ e /year)
Recyclable Containers	0.35	0.02	0.54	0.55
Mixed Paper	0.81	0.31	3.17	3.49
Food Waste	2.03	0.54	0.95	1.49
All Other Waste	2.99	1.38	-	1.38
TOTAL	6.19	2.25	4.67	6.92

Table 5.2 GHG Emissions SAVED from Recycling

Item	Quantity Recycled	GHG Emissions from raw materials extraction
	(tonnes / year)	(tonnes / year)
Recyclable Containers	2.58	3.93
Mixed Paper	1.82	7.11
Shredded Paper	32.11	100.89
TOTAL	36.52	111.94



6. Detailed Waste Stream Findings and Solutions

6.1 Recyclables found in Landfilled Waste

6.1a Paper, Newsprint, and Cardboard



Photo 6.1a Mixed Paper found in landfilled waste

About 813 kg per year (13%) of the garbage by mass was found to be recyclable paper including cardboard and newsprint.

Recyclable mixed paper and newsprint represent a strong opportunity for diverting a significant portion of Head Office's solid waste and lowering its carbon and deforestation footprints. Some of the most common paper items from the office area that were disposed of in the garbage include: copy/printer paper, newspapers, and paper packaging. No shredded paper was found in the landfilled waste on any of our visits.

Please Note: As of January 1st, 2008 cardboard, paper, and newsprint are now banned from landfill and incinerator by Metro Vancouver and should not be in the waste stream. Fines incurred by waste service providers for tipping banned materials into the landfill may be charged back to their clients. For a list of banned items visit: www.metrovancouver.org/services/solidwaste/disposal/Pages/bannedmaterials.aspx



6.2b Paper Towels



Photo 6.2b: Paper Towels found in office landfilled waste

About 1540 kg per year (25%) of the landfilled waste by mass consisted of paper towels. Most of the paper towel in the landfilled waste is already wet and/or will absorb additional moisture from the organic contents found in each bag. Paper towel moisture increases the amount of paper towel-related mass significantly. Unfortunately, the paper towels are likely sent straight to landfill sealed in airtight landfilled waste bags and may be buried in the landfill before releasing their moisture – this could increase the amount of anaerobic respiration and resulting leachate in landfills. Thus there is incentive to minimize environmental impact by reducing the amount of paper towels that end up in the landfilled waste. Additional paper towel-related waste mass also increases the fuel consumption of hauling and processing vehicles. There are two solutions for minimizing the environmental impact of paper towels:

Solutions

- 1) Install high-efficiency hand dryers – modern hand dryers have relatively quick payback times (with an average of *2.5 - 5 years including installation costs and then annual savings after payback) versus purchasing disposable paper towel products.

Photo 6.2b-2: The Dyson Airblade high efficiency hand dryer



LEED qualifying and Greenspec certified, Dyson's Airblade hand dryer with sterilizing EPA filter uses an estimated 80% less power than conventional hand dryers, while delivering a fast and effective drying. For more information on the Airblade visit: www.dysonairblade.com

- 2) If paper towels are seen to be necessary, Client should ensure that all Paper Towels purchased are composed of 100% PCW content. For more info on 100% PCW single or multifold paper towel, visit: Frogfile.com and search 'Paper Towel.' See second product 'Kraft Paper Towel.'

* Average based on projections performed in Green Workplace Paper Assessments for other clients.



6.2c Coffee Cups



Photo 6.2c Disposable Coffee Cups found in landfilled waste

About 213 kg per year (3.5%) of the landfilled waste by mass consisted of coffee cups, which are actually compostable where facilities exist. This report groups coffee cups in with compostable waste, as some industrial composting facilities are in fact capable of breaking down the cups which consist of paper and wax. However, in Metro Vancouver there are few service contractors who will offer this service and coffee cups in the landfilled waste are destined for landfill or incineration. Therefore the best strategy is for Client to encourage staff to reduce the amount of disposable cups consumed.

Coffee cups appear to be brought into the office from local coffee shops and eateries and it may be difficult to reduce this part of the waste stream. Alerting the staff to the collective impact of these materials might help to change this behavior. Encourage staff to carry re-usable mugs.

7. Notes and Recommendations

Observations

- Some Head Office staff commented on not wanting desk side recycling bins due to lack of space and the perceived adequacy of centralized recycling bins
- Though every floor in Head Office has a fairly generous offering of centralized recycling bins, signage and bin array are inconsistent. For example: paper bins are sometimes located beside blue bins and sometimes not. In some areas secure document shredding/recycling bins are located alone or with mixed paper bins. In some instances centralized waste bins are placed without neighboring recycling bins
- Main lunch room has 3 paper towel dispensers: two for hands and one for mopping up
- Hand Dryers in select washrooms are inefficient and of poor quality
- No blue bins in meeting rooms
- First floor public service area lacks recycling bins (or sufficient recycling bins) and accompanying signage

Suggestions

- ✓ Head Office centralized waste and recycling offerings should be as uniform as space will allow so that staff can easily take advantage of diversion opportunities which become universal regardless of where they are (or happen to travel) inside the building. For example: make sure each centralized station is equipped with: paper bin, secure document bin, blue bin and battery collection box
- ✓ Explore feasibility of staff-sponsored soft plastics recycling including one box (or bag) at each centralized recycling station
- ✓ Replace all washroom and lunchroom hand paper towel dispensers with effective, high-efficiency hand dryers (see page 6 of this report for details)
- ✓ Outfit all meeting rooms and public service areas with clearly marked recycling bins