FoodMesh
Give food a second chance

Food recovery baseline in Metro Vancouver

July 1 - December 31, 2024

VERSION 1 / 2 April 2025 / Prepared by Laura Mercy

metrovancouver
SERVICES AND SOLUTIONS FOR A LIVABLE REGION

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Objective

Establish a baseline of the food recovery ecosystem in Metro Vancouver in terms of number of donors, food recovered, number of meals created and CO_2e emissions avoided.

Scope

Data collected by all participating food recovery organizations and upcyclers, picking up from locations within Metro Vancouver for the period of July 1 through December 31, 2024.

Terminology

Donors

When we refer to donors in this document, we are referring to any type of business or organization from which surplus food originates. They may donate or sell their unsold food as part of the food recovery process.

Participating organization

Organization that shared its data as part of this project (listed in Appendix 1)

Participating organizations

We reached out to 74 organizations that we know to actively recover food in Metro Vancouver, and received responses from 11 organizations, which makes for a total of **12 participating organizations** including FoodMesh.

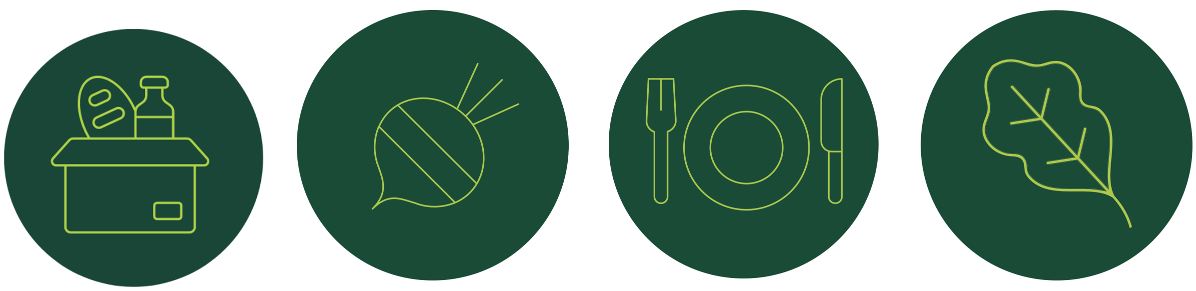
We would like to thank Big Mountain Foods, CityReach Care Society, Flashfood, Food Stash Foundation, Friends in Need, Refood, Second Harvest, Second Savour, Too Good To Go, Vancouver Community Fridge Project and Vancouver Food Runners for contributing to this project.

Key findings

Through the data collected for July through December 2024, we identified **1,763 food donors**, capturing 15% of all potential food donors in the Metro Vancouver region.

They collectively redirected **5,080,049 kg** of food away from landfill during this six month period. The vast majority was used for human consumption (83%), while 16% was donated for farm feed and 1% was composted. This resulted in **7.8 million meals** created and **14,649 metric tonnes of CO2e emissions avoided**.

1,763	5,080,049 kg	7.8 million	14,648,842 kg



Number of donors	Weight of food recovered	Equivalent meals created	CO2e emissions avoided

Detailed analysis

Food recovery models

Food recovery in Metro Vancouver occurs in a number of different ways. This includes:

- Food businesses donate their surplus food to hunger-relief organizations, who collect it from the business, bring it back to their facility to sort, and redistribute it to other charities within their network or directly to individuals via food hampers, free meals programs, food market, etc. This can either be facilitated by a third party (e.g. FoodMesh, Second Harvest) or organized directly by the hunger-relief organization (e.g. FoodStash Foundation)

- Food businesses donate their surplus food to an intermediary organization, who collects the food and immediately redistributes it to hunger-relief organizations (e.g. Vancouver Food Runners)

- Food businesses donate their surplus food to hobby farmers, who collect it directly from the business and feed it to their animals. This can either be facilitated by a third party (e.g. FoodMesh, Loop Resource) or organized directly by the farmer

- Food businesses sell their surplus food directly to consumers at a reduced price, facilitated by mobile technology (e.g. Too Good to Go, FlashFood)

- Food businesses sell their surplus food at a reduced cost to a third party organization to sell to consumers at a reduced price (e.g. Peko Produce)

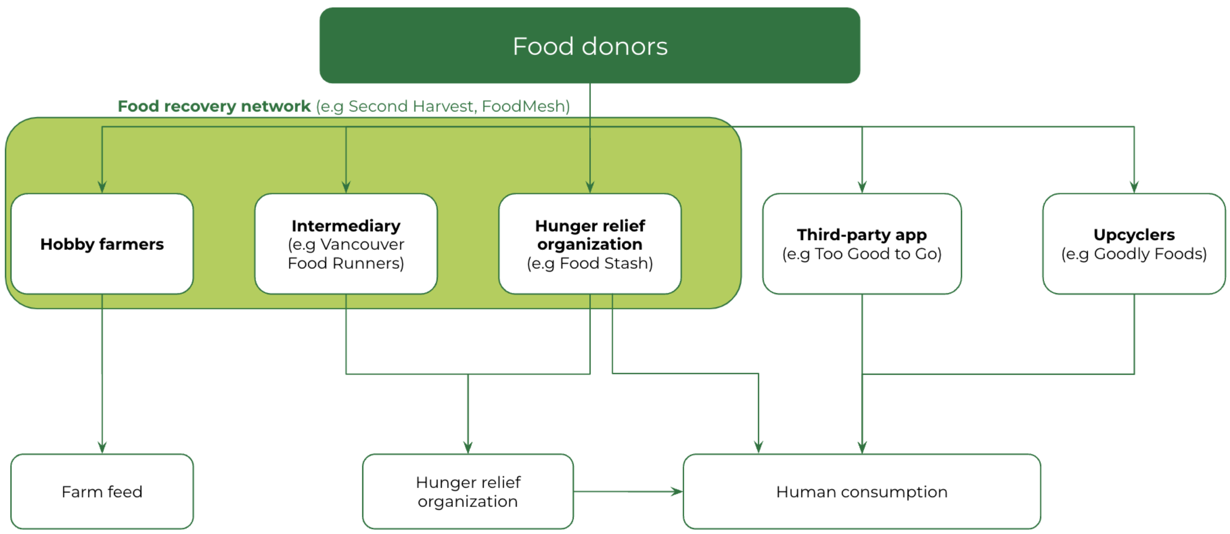
- Food businesses donate and/or sell their surplus food to an organization that upcycles that food into a new product of a higher value (e.g. Second Savour)

- Food businesses pay for organizations to collect and reprocesses food leftovers (e.g. fat) into a non-food product such as renewable energy (e.g. WestCoast Reduction, Redux)

- Organizations receiving food donations may be part of an organized network (e.g. FoodMesh, Second Harvest), self-managed, or ad-hoc (events, catering).

They can also be seasonal (e.g. farms can only donate during the harvest months, hobby farmers can only accept food donations until their animals are sent for slaughter)

These various models are illustrated in this diagram below:



Common causes of food 'waste'

Through our work, we are aware of the following common reasons for surplus food:

➔ Dates: The product is considered too close to its "use by" or "best before" date to be sold to consumers through its usual channels

➔ There are issues with its packaging, such as:
- Product has been rebranded making products with the original packaging obsolete
- There are typos/errors on the labelling
- The product contains undeclared allergens

➔ The product is surplus to requirements, due to:
- Over ordering
- Canceled orders
- Forgotten inventory

➔ The product is considered "too ugly" to sell, for example:

- The product is considered off-spec or low grade
- The product is damaged in some way
- The product is visibly past its peak freshness (bruised, moldy)

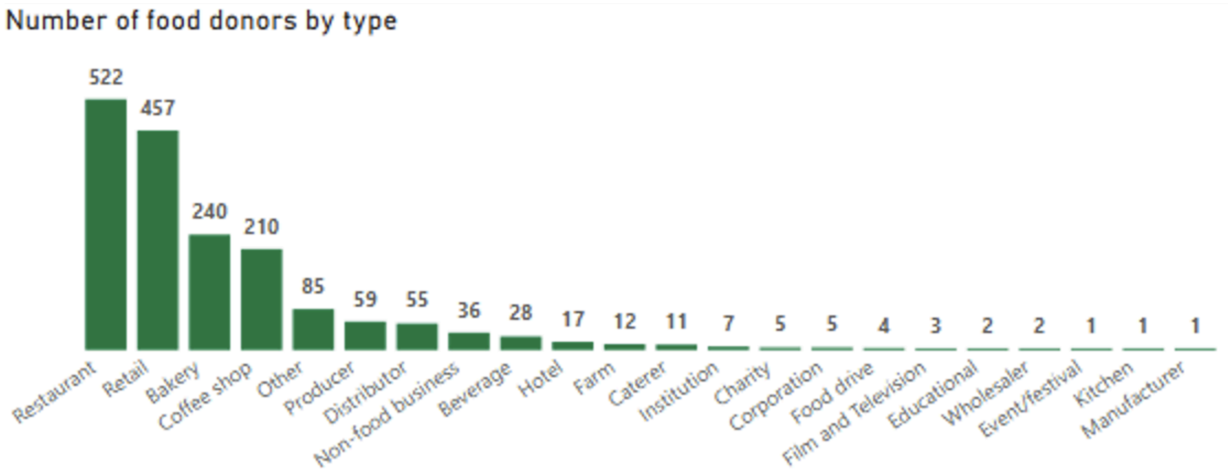
Details of food recovery in Metro Vancouver

- As of February 2025, there were 134,566 active business licenses in 12 of the municipalities that we were able to get business licenses data for (see appendix 2 for more details) Those 12 municipalities represent 92% of the population in the region.
  Out of those 134,566 active businesses, 11,587 were identified as food businesses or potential food donors.

- Through the data collected, we identified 1,763 food donors , capturing 15% of the total potential food donors in Metro Vancouver.
  - The majority of donors in Metro Vancouver are restaurants (30%) followed by retail (26%), bakeries (14%) and coffee shops (12%).
  - Others include distributors, wholesalers, caterers, farms, educational institutions, pharmacy retailers, events, healthcare, meal kit services, and non-food businesses.

- The food donors collectively redirected 5,080,049 kg of food away from landfills, which was either donated for human consumption or animal feed, or sold at a discounted price.
  - 59% originated from retailers, 13% from manufacturers, 13% from restaurants and 4% from distributors.
  - One manufacturer alone represents 13% of the total food donated, as it generates a significant amount of byproduct that is donated to farmers.

- Even though restaurants represent the largest type of food donor, retailers have diverted the highest weight in aggregate, with 5x more food than restaurants and manufacturers.



- Atypical donors include non-food businesses (Aritzia, Vancouver Whitecaps Training Center, Tiffany & Co, etc.), meal-kit services (Fresh Prep), and events (Canada Running Series)

- Food donated through food drives has been included, as it may come from businesses or individuals.

- Of the food recovered, 83% is for human consumption, which enables the creation of over 7.8 millions meals for the six month period. 16% was donated to farm, mostly driven by manufacturers' byproducts.

- Donation remains the most common way of diverting food surplus, with 89% going to charities or farms. 11% is diverted by selling food about to expire at a discount. The upcycling data was unfortunately not significant enough to report on.

- When food is kept in the human consumption chain, it prevents 3.4 metric tonnes of CO_2e to be released in the atmosphere for each tonne of food recovered. All together, more than 14,640 tonnes of CO_2e were avoided, that's equivalent to 3,200 gas-powered cars taken off the road for one year.

Methodology

1. The following data was requested from the food recovery organizations:
    a. List of Metro Vancouver-based suppliers, including name, location and type of business
    b. Total weight of food recovered in aggregate
    c. Estimate of food destination (human consumption, animal feed or compost)
    d. Total number of organizations and/or consumers receiving the recovered food

2. The data received was assessed for any missing information or clarification, then aggregated and adjusted as needed:

    a. We removed double-counted items, such as second-hand donations already captured through first-hand data. For example, if a food recovery organization disclosed that they are picking up from a location that is already captured as a food donor through another organization, only one of those data points was included. Another scenario is when a charity picks up from another charity that collects food surplus from a store. The only donor counted is the store, even though charity A does donate to charity B.

    b. Charities donating to other charities are also included, as long as the donating charity is not one of the participating organizations and is not part of the FoodMesh network (for example, food received by a participating charity from the Greater Vancouver Food Bank would be included, as GVFB data is not counted through either FoodMesh or self reported)
    However, even though the food is being reported here as donated by charities, it actually originates from a food business, but we do not have visibility into this stream.

    c. We estimated the weight distribution by business type when it was not directly available, and assumed a proportional distribution. For example, if we knew that 30% of food donors were restaurants, we assumed that 30% of the weight of the food recovered came from restaurants. Even though the distribution might change depending on the type of business (retailers tend to have more food than restaurants for example), we choose to follow this methodology in the absence of other reliable data.

3. The total weight was allocated to a destination (human, farm or compost), based on the information disclosed by the participating organizations.

4. CO_2e emissions avoided were calculated as follows:
   a. Calculated status quo emissions i.e. food ending up in landfill
   b. Calculated emissions generated by the alternative solutions (food being donated for human consumption or animal feed)
   c. Calculated the difference between the alternative solution and the status quo as 'emissions avoided'

   Those 3 steps produce a conversion factor of emissions saved of 3.36 for food going to human consumption, 0.46 for farm feed, and 0.75 for compost. The calculations were based on REFED conversion factors and methodology.

5. The number of meals was calculated as follows: Total weight of food redistributed for human consumption / 544 grams per meal, as per REFED methodology (based on Feeding America statistics)

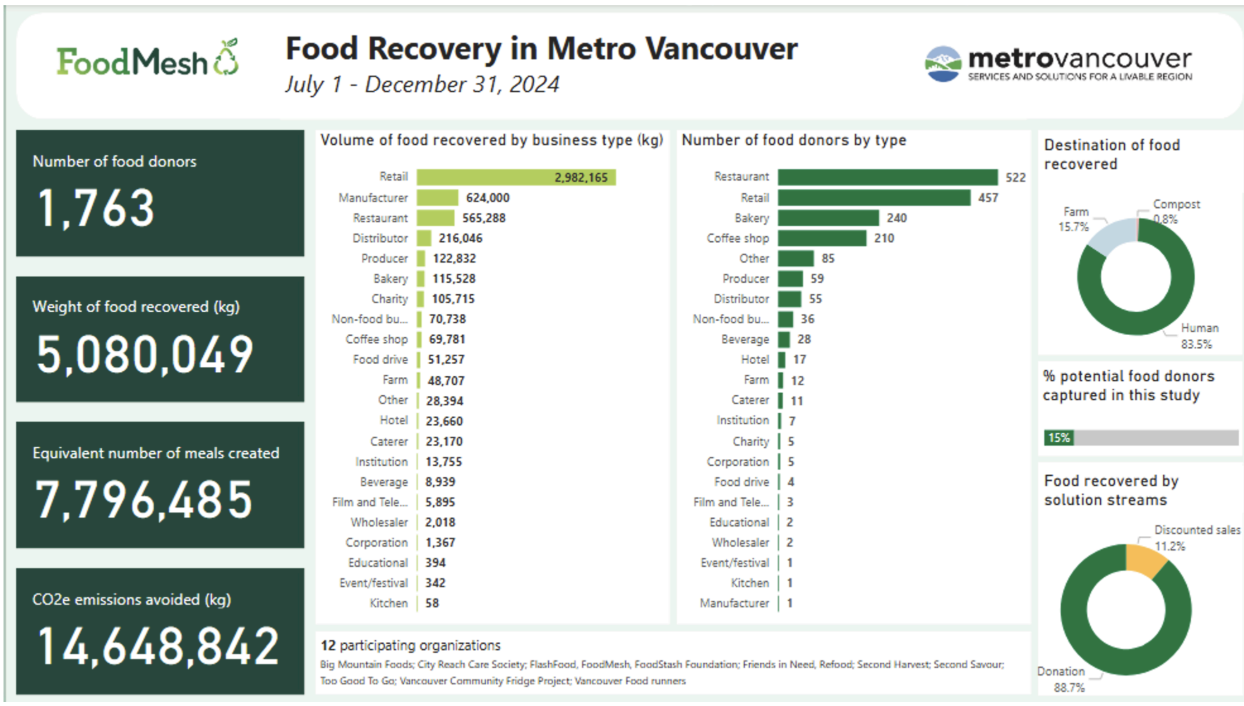
6. The number of potential food donors in Metro Vancouver were calculated by pulling the number of active business licenses from the municipalities open data portal or by direct request. Based on the business type listed in the license, we categorized them into 3 groups:
   a. Food donors: businesses involved in any point of the food supply chain (urban farms, distributors, wholesalers, retailers, restaurants, etc.)
   b. Potential food donors: businesses that are not food businesses, but that do have food on premises such as entertainment venues, schools, theaters, hospitals, etc.
   c. Non-food businesses: businesses that are unlikely to have food donations (contractors, health services, offices, banks, etc.)

7. For consistency, we calculated the number of meals and CO_2e emissions avoided based on the FoodMesh methodology, even when the food recovery organization provided their own metrics.

8. Summary of data limitations:
   a. It is possible that some food donors were counted twice if the name of the donor was not openly disclosed by the participating organizations (as these were not provided by Too Good To Go, Second Harvest)

b. Although 100% of the data is directly measured by the participating organizations, the weight breakdown by business type has been estimated for 3 food recovery organizations, representing 34% of the total weight breakdown (see 2c above)
c. The CO_2e emissions avoided do not include emissions related to transportation of the recovered food.

Results at a glance



Appendices

Appendix 1 - List of participating organizations

In addition to FoodMesh, **11 organizations** participated in this project out of the 74 that were contacted.

Appendix 2 - Food businesses in Metro Vancouver

	Food businesses	Non Food Businesses	Total business licenses	% food businesses	Population
Data collected					
Burnaby	1,311	14,349	15,660	8.37%	249,125
Coquitlam	470	4,891	5,361	8.77%	148,625
Delta	254	2,832	3,086	8.23%	108,455
Langley township	475	7,688	8,163	5.82%	132,603
Maple Ridge	282	2,726	3,008	9.38%	90,990
New Westminster	249	3,070	3,319	7.50%	78,916
North Vancouver (District)	240	2,700	2,940	8.16%	88,168
Port Moody	178	3,943	4,121	4.32%	33,535
Richmond	1,494	8,495	9,989	14.96%	209,937
Surrey	1,534	17,178	18,712	8.20%	568,322
Vancouver	5,009	52,633	57,642	8.69%	662,248
West Vancouver	91	2,474	2,565	3.55%	44,122
	11,587	**122,979**	**134,566**	**8.61%**	**92.3%**
Data not available					
Port Coquitlam					61,498
North Vancouver (City)					58,120
Langley (City)					28,963
White Rock					21,939
Pitt Meadows					19,146
Bowen Island					4,256
Anmore					2,356
Tsawwassen First Nation					2,256
Lions Bay					1,390
Belcarra					687
Total Population					**2,615,657**

Sources:

City of Vancouver Open Data Portal
Surrey Open Data Portal
Burnaby Open Data Portal
Coquitlam Open Data Portal
Langley Township Open Data Portal
Delta Open Data Portal
Maple Ridge Open Data Portal
District of North Vancouver: supplied via email
New Westminster Open Data Portal
West Vancouver Open Data Portal
Port Moody Open Data Portal