



File: CR-12-01  
Ref: RD 2020 Jul 3

Ms. Kate Barchard, Manager of Administration Services, Corporate Officer  
City of Pitt Meadows  
12007 Harris Road  
Pitt Meadows, BC V3Y 2B5

Dear Ms. Barchard:

**Food Flows in Metro Vancouver: Study Results**

At its July 3, 2020 regular meeting, the Board of Directors of the Metro Vancouver Regional District (Metro Vancouver) adopted the following resolution:

*That the MVRD Board receive for information the report dated May 20, 2020, titled "Food Flows in Metro Vancouver: Study Results, and direct staff to circulate the report to all member jurisdictions and post-secondary institutions in the region involved in food and agriculture.*

The "Food Flows in Metro Vancouver", is a unique study that describes the movement of food across the regional district boundaries including imports, exports and the method used to transport the basic food commodities. The data compiled was used to estimate the British Columbia and Metro Vancouver food supply, which is based on the food consumed locally. An Executive Summary of the study and the staff report is enclosed in this letter for your information. Further details are available in the technical report, which is posted on the Metro Vancouver website ([www.metrovancover.org](http://www.metrovancover.org), search "Food Flows in Metro Vancouver").

The results of the study revealed that Metro Vancouver is a food distribution hub for British Columbia. Our food distribution system is dependent on goods movement, particularly the trucking industry, moving imported fruits and vegetables from the United States. While our region is a distribution hub for imported food, a third of BC's food supply is sourced from within the Province.



Overall, we are sharing these results so that the data can be used to inform other studies related to regional land use planning, goods movement, emergency management and climate adaptation. If you have any questions, please contact Theresa Duynstee, Regional Planner II, Regional Planning and Housing Services, by phone at 604-451-6024 or by email at [theresa.duynstee@metrovancover.org](mailto:theresa.duynstee@metrovancover.org).

Sincerely,



Sean Galloway, MUDD, RPP, MCIP  
Director, Regional Planning and Electoral Area Services

SG/HM/td

cc: Jerry W. Dobrovolny, Commissioner/Chief Administrative Officer, Metro Vancouver  
Heather McNell, General Manager, Regional Planning and Housing Services, Metro Vancouver  
Theresa Duynstee, Regional Planner II, Regional Planning and Housing Services, Metro Vancouver

Encl: Executive Summary: Food Flows in Metro Vancouver  
Staff Report: Food Flows in Metro Vancouver Study Results

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To: Regional Planning Committee

From: Theresa Duynstee, Senior Planner, Regional Planning and Housing Services

Date: May 20, 2020

Meeting Date: June 12, 2020

Subject: **Food Flows in Metro Vancouver: Study Results**

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### RECOMMENDATION

That the MVRD Board receive for information the report dated May 20, 2020, titled "Food Flows in Metro Vancouver: Study Results".

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### EXECUTIVE SUMMARY

A recently completed study, *Food Flows in Metro Vancouver* commissioned by Metro Vancouver, describes the food commodities that are transported across regional district boundaries. The results include international imports and exports through the Port of Vancouver, U.S. border and YVR air cargo, as well as information on interprovincial food flows and the overall BC food supply.

Metro Vancouver is a food distribution hub for the province with approximately 78% of the total provincial food supply crossing regional boundaries. While 40% percent of the BC food supply is from international imports, it was estimated that 35% is sourced from within the province and only 14% of the Metro Vancouver food supply is sourced within the region. This study will inform other work related to food distribution, regional planning and emergency management.

### PURPOSE

To share the results of the *Food Flows in Metro Vancouver* study (Attachment) with the Regional Planning Committee and MVRD Board.

### BACKGROUND

In December 2019, Metro Vancouver hired Davies Transportation Consulting Inc. to conduct a *Food Flows in Metro Vancouver* study (the Study). The purpose of the Study was to find out how food moves across the region, identify vulnerabilities in the food distribution systems and inform regional land use and transportation planning as well as emergency management. A final report was submitted on April 30, 2020 and was shared with the Agricultural Advisory Committee at its meeting on May 22, 2020. The Study is now ready for Regional Planning Committee and Board receipt.

### FOOD FLOWS IN METRO VANCOUVER STUDY

"Metro Vancouver Food Flows" refers to the movement of food across regional district boundaries. The Study compiled data from multiple sources on the types of food commodities that are imported into and exported from the region (both volume and dollar value), and the transportation method used to move food across the region to other provincial or national destinations. The Study also includes an estimate of the food supply, which is based on the food consumed by BC residents. Table 1 presents the categories used to describe the different origins and destinations of the Metro Vancouver Food Flows.



Most of the data used in the Study was obtained from Statistics Canada (2018), while other information had to be calculated based on population or was derived from other sources. The available shipping units made it a challenging study because of the necessity to convert values to quantities and vice versa.

**Table 1: Metro Vancouver Food Flows**

CATEGORY	DESCRIPTION
Intra-regional Flows	Food produced and consumed in Metro Vancouver.
Intra-provincial Imports	Food produced in BC outside of Metro Vancouver and transported to Metro Vancouver for consumption.
Intra-provincial Exports	Food produced in Metro Vancouver and transported to other regions of BC for consumption.
Inter-provincial Imports	Food produced in the other provinces of Canada and transported to Metro Vancouver for consumption.
Inter-provincial Exports	Food produced in Metro Vancouver and transported to other provinces for consumption.
U.S. Imports	Food produced in the U.S. and transported to Metro Vancouver or through Metro Vancouver to other Canadian locations for consumption.
U.S. Exports	Food produced in Metro Vancouver or other locations in Canada and transported through Metro Vancouver for consumption in the U.S.
Offshore Imports	Food produced in overseas countries and transported to Metro Vancouver or through Metro Vancouver to other Canadian locations for consumption.
Offshore Exports	Food produced in Metro Vancouver or other locations in Canada and transported through Metro Vancouver for consumption in overseas countries.

## STUDY RESULTS

In 2018, the total cargo of food flowing across Metro Vancouver's borders (exports and imports) is estimated to be 33.7 million tonnes worth \$32 billion. Most of this volume (83%) are grains that are being exported from the prairie provinces.

The total annual food supply (based on consumption) for BC is estimated to be 4.8 million tonnes and includes food consumed in Metro Vancouver plus the rest of BC. It was estimated that the source of the BC food supply includes 39.6% from international imports, 27.1% inter-provincial and 34.9% intra-provincial. The intra-provincial figure reveals that approximately 35% of the BC food supply is sourced from within the province.

The Metro Vancouver food supply was estimated to be 53% of the provincial food supply (based on population), which equals approximately 2.54 million tonnes. Approximately a 32% of the food supply for Metro Vancouver is sourced from BC and 14% of the Metro Vancouver food supply is sourced within the region.

Metro Vancouver is a food distribution hub for the province and other parts Canada. An estimated 3.8 million tonnes, or 78% of the total provincial food supply, crosses the region's boundaries. A description of the BC food supply by commodity is provided in Table 2. Information on commodities used as inputs into food manufacturing, which are highly processed food and not typically consumed directly, are not included in the Statistics Canada data. This situation may overstate the basic commodities and underestimate the amount of food used in processing.

**Table 2: BC Food Supply by Commodity**

COMMODITY	FOOD SOURCE
Dairy	BC produces 80% of fluid milk but imports 70% of cheese and processed milk from other provinces. Metro Vancouver (14%) & Fraser Valley (62%) account for 76% of provincial fluid milk supply.
Poultry	BC is self-sufficient in poultry products (chicken and turkey); 24% is sourced from Metro Vancouver and 56% from the Fraser Valley.
Beef	80% + is sourced inter-provincially.
Pork	54% is sourced inter-provincially and 37% is intra-provincial.
Eggs	Eggs produced in the Lower Mainland accounts for 77% of total BC production; 54,000 tonnes is sourced from Metro Vancouver (6%) and the Fraser Valley (94%).
Seafood	Metro Vancouver generates a surplus of seafood products as most seafood is processed in the Lower Mainland (81%). In 2018, commercial harvest landings was 196,300 tonnes and aquaculture was 98,000 tonnes.
Honey	BC honey production is 1,544 tonnes, while consumption is 7,288 tonnes. Metro Vancouver accounts for 40% of BC production.
Vegetables	18.5% of vegetables is sourced intra-provincially. BC potato production is 50% of potato consumption and 34% of other vegetables. Excluding potatoes, BC is heavily dependent on international imports of vegetables (63% of vegetables consumed). The Lower Mainland accounted for 68% of BC vegetable production in 2016.
Fruit	BC is highly dependent on international imports of fruit (98% of consumption). BC exports blueberries, cranberries and cherries.
Rice	Metro Vancouver is a major gateway for rice; imports are both international (75% or 92,927 tonnes) and from the U.S. (31,436 tonnes).
Milling Products	179,229 tonnes of milling products are consumed, which 15.3% are sourced intra-provincially. Wheat flour accounts for 90% of BC consumption. Most mills are located in Metro Vancouver or the Fraser Valley.

## LESSONS LEARNED

The Study produced a technical report that provides information about the transportation of food commodities in and through Metro Vancouver and the amount of food consumed in BC. It is the first time this data has been compiled in one place to give a new perspective on the BC food supply and the region's food distribution system. It is anticipated that the results will be used to inform other studies related to regional land use planning, good movements, emergency management and climate change adaptation.



Some of the key lessons learned from the Study include the following:

- Metro Vancouver and BC are self-sufficient in the supply managed commodities (dairy, poultry and eggs), however the region is dependent on the U.S. for fruits and vegetables. Almost 60% of the BC imported food supply requires temperature-controlled distribution.
- Trucking dominates the food supply chain for Metro Vancouver. Trucks offer a flexible mode of transporting food but also can be disrupted by road closures.
- Missing from the data are the sources and quantity of feed inputs used in the production of poultry, eggs and dairy and the degree that these commodities are dependent on imports.
- Both self-sufficiency and resilience contributes to food security. There is value in having multiple sources of food, both local and imported.
- Going forward, we need to consider the resiliency of the BC and Metro Vancouver food supply; where is it most successful and where are the significant vulnerabilities in the food supply and distribution system?

The discussion at the May Agricultural Advisory Committee meeting also considered the following:

- The extent the estimates differ from the B.C. Food Self-Reliance report completed by the Ministry of Agriculture and Lands in 2006.
- The ability of this study to estimate how much of the food produced in the Lower Mainland is actually consumed in the Lower Mainland. A remaining gap is the amount and types of food that farmers are selling directly to consumers.
- Supply chains are based on economics and will prioritize the lowest cost food or feed supplies.

#### **NEXT STEPS**

Staff will continue to share the results of the Study with other agencies so that the data can be used to inform other programs and research initiatives. Further discussion on avenues to address the vulnerabilities of the regional food system are warranted especially under emergency situations. The COVID Response Task Force will also receive this report due to their interest in the region's food security and resilience.

#### **ALTERNATIVES**

This is an information report. No alternatives are presented.

#### **FINANCIAL IMPLICATIONS**

The cost of this study was \$40,000, which was distributed over the Board-approved 2019 and 2020 Regional Planning budgets.

#### **CONCLUSION**

The *Food Flows in Metro Vancouver* study provides a unique perspective on how food is being transported across regional boundaries and identified the sources of the food supply for BC and Metro Vancouver. This Study can be used to inform other regional land use planning and emergency management initiatives.





## EXECUTIVE SUMMARY

# Food Flows in Metro Vancouver

## HIGHLIGHTS

- Metro Vancouver is the food distribution hub for BC. 78% of the provincial food supply flows to, from, through or within the region.
- Of the total food flows, 83% are offshore exports of grains, oil seeds, and legumes.
- 34% of the BC food supply is sourced from within the Province.
- 14% of the food produced in Metro Vancouver is consumed within the region.
- Metro Vancouver and BC are self-sufficient in the supply managed commodities (dairy, poultry and eggs), but are very dependent on the US and other countries for fruits and vegetables.

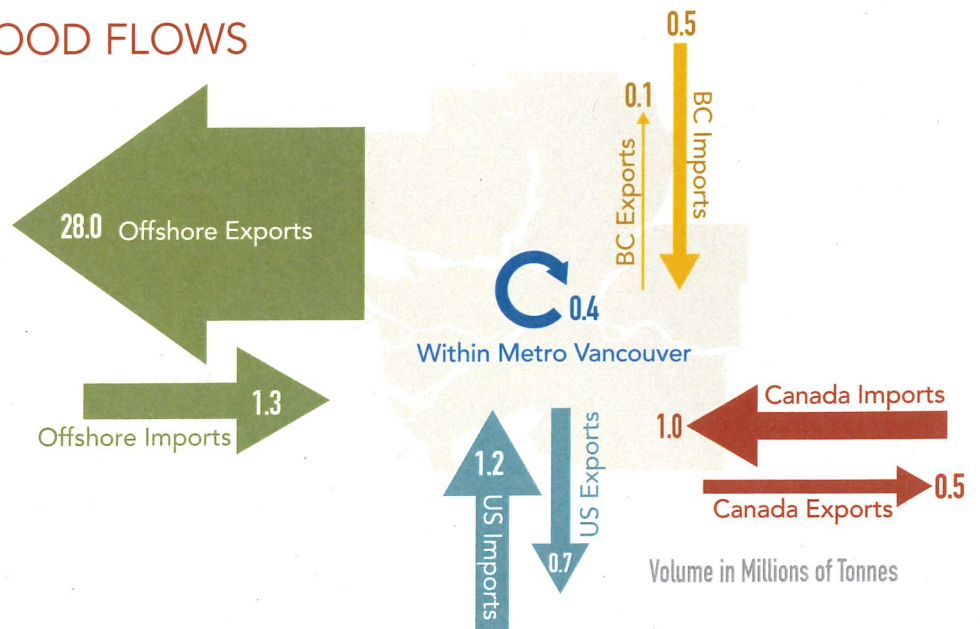
The *Food Flows in Metro Vancouver* study estimates the volume and value of food imported and exported from the Metro Vancouver region and the methods used to transport this food to and from international sources, the US, other provinces and within BC.

The magnitude of food flows is influenced by the region's location and transportation infrastructure. In general, transportation costs increase with distance, so closer sources of supply are preferred. The routing of food flows is also dependent on the efficiency and capacity of transportation infrastructure. Trucks dominate the food supply chain in Metro Vancouver because they offer a flexible mode of transportation.



# METRO VANCOUVER FOOD FLOWS

Metro Vancouver Food Flows refers to the movement of food across regional district boundaries. The study estimates the food supply, which is based on the amount of food consumed in Metro Vancouver and BC, as well as the amount of food that travels through the region en route to other destinations. The analysis of flows concentrates on the stages of the food supply chain from farm production to wholesale distribution, and does not include last mile deliveries to the point of consumption.



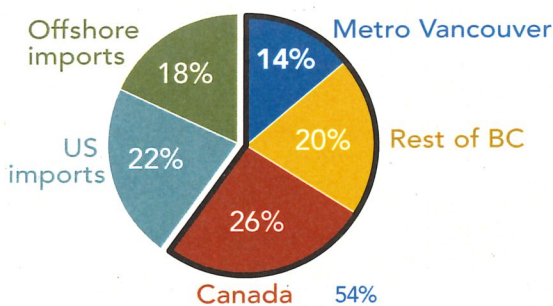
The total annual food flows was approximately 33.7 million tonnes of agricultural products (mostly cereal grains, oil seeds and legumes) worth \$32 billion in 2018. Of the total volume, 83% is offshore exports that are transported by rail from the Prairies and shipped through the Port of Vancouver.

Metro Vancouver is the primary entry point for food flows to and from the US and offshore sources. The Pacific

Highway and Aldergrove border crossings accounted for 84% of BC's food imports from the US and 70% of BC's food exports to the US (by value). Food imports through the port container terminals in Metro Vancouver are mostly destined for outside of BC. Virtually all international food air cargo in BC (less than 0.1% of the total food flows) passes through the Vancouver International Airport.

## THE METRO VANCOUVER FOOD SUPPLY

### WHERE OUR FOOD ORIGINATES

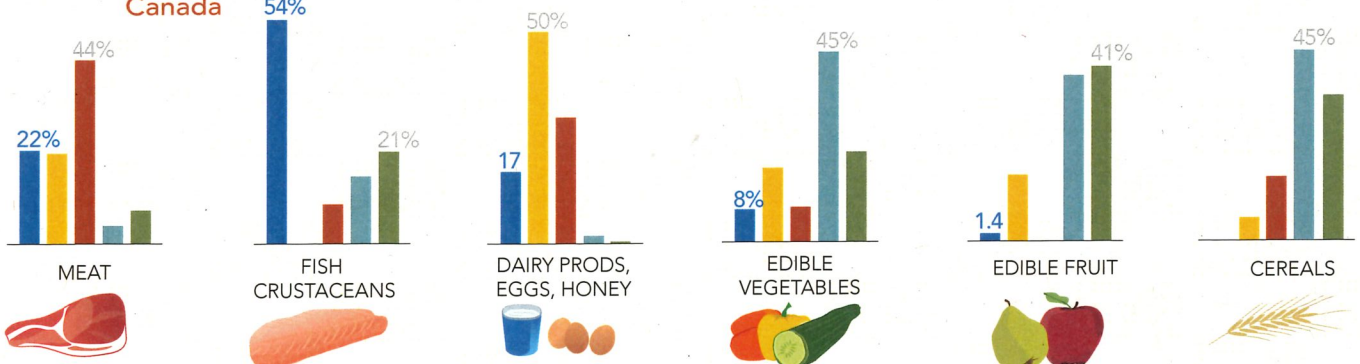


60% of the Metro Vancouver food supply originates in Canada

**2.54 million tonnes**

Estimated amount of food consumed annually in Metro Vancouver\*

\* based on 53% of the provincial food supply by population





## THE BC FOOD SUPPLY

The total annual BC food supply (based on consumption) is 4.8 million tonnes and includes food consumed in Metro Vancouver plus the rest of BC. The BC food supply is sourced from international imports (39%), other provinces (26%) and from within BC (34%).



### Offshore Imports

#### Rice

Rice is imported from offshore countries (75% or 92,927 tonnes) and from the US (31,436 tonnes) making Metro Vancouver a major gateway for rice.



#### Poultry

BC is self-sufficient in poultry products (chicken and turkey); 24% is sourced from Metro Vancouver and 56% from the Fraser Valley.



#### Pork

54% is sourced inter-provincially and 37% is sourced from within BC.



#### Honey

BC honey production is 1,544 tonnes, while consumption is 7,288 tonnes. Metro Vancouver accounts for 40% of BC production.



#### Milling Products

179,229 tonnes of milling products are consumed in BC, of which 31% is sourced within the Province. Wheat flour accounts for 90% of BC consumption. Most mills are located in Metro Vancouver or the Fraser Valley.



### Canada Imports



### Offshore Exports

#### Seafood

Metro Vancouver generates a surplus of seafood products as most seafood is processed in the Lower Mainland (81%). In 2018, commercial harvest landings totalled 196,300 tonnes and aquaculture totalled 98,000 tonnes.



#### Dairy

BC produces 80% of fluid milk but imports 70% of cheese and processed milk. Metro Vancouver (14%) & Fraser Valley (62%) account for 76% of provincial fluid milk supply.



#### Beef

80% + is sourced inter-provincially.



#### Eggs

Eggs produced in Metro Vancouver and the Fraser Valley totalled 54,000 tonnes or 77% of the total BC production.

### Metro Vancouver

### Fraser Valley



#### Vegetables

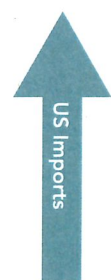
Only 25% of vegetables are sourced within BC. Except for potatoes, BC is heavily dependent on international imports of vegetables (63% of vegetables consumed).

68% of BC vegetable production comes from Metro Vancouver and Fraser Valley Regional District (2016).



#### Fruit

BC is highly dependent on international imports of fruit (79% of consumption). BC exports blueberries, cranberries and cherries.



### US Imports





## FOOD SECURITY AND RESILIENCE

For residents of Metro Vancouver and the rest of BC, food security and resilience depends on both local and imported sources of food. The Covid-19 pandemic has revealed that BC food supply chains are generally robust, although challenges emerged from a shortage of workers. In other situations, such as a natural disaster, there may be different outcomes because the food supply relies heavily on a well-functioning transportation system and open borders.

The resiliency of the BC and Metro Vancouver food supply can be strengthened by protecting agricultural land for food production and purchasing more food from local BC farmers and fishers.

## ABOUT THIS STUDY

Davies Transportation Consulting Inc. was contracted by Metro Vancouver to undertake the [Food Flows in Metro Vancouver \(2020\)](#) to better understand the region's role in the food supply chain. Most of the data was obtained from Statistics Canada (2018), while other information had to be calculated based on population or was derived from other sources. Gaps in data on goods movement and transportation flows in Canada required the value of some shipping units to be converted to quantities and vice versa. The results of this study can inform other work related to food distribution, regional planning, goods movement, and emergency management.

### FOR MORE INFORMATION

[metrovancover.org](https://metrovancover.org)  
(search 'Food Flows in Metro Vancouver')



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