

# Pacific Abour

**A study on Carbon Foodprint**

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# Problem Identification

## **Problem: How does Pacific Arbour measure its Carbon FoodPrint for its Cedar Springs residence?**

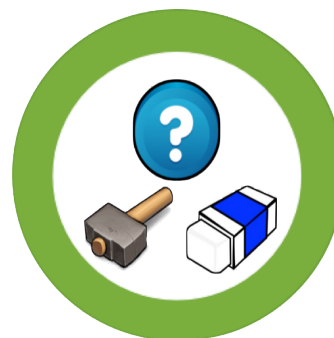
We met with Karim Winsor, Director of Development, at his downtown office to discuss potential GHG reduction opportunities facing Pacific Arbour. We mapped the greening process of the company and determined that Pacific Arbour had already tackled several of its environmental goals, from simple paper reduction techniques to changes in the structure of their buildings. However, Karim mentioned that there was one area where Pacific Arbour had never explored before. Pacific Arbour has never investigated the greenhouse gas emissions generated by purchasing food from their suppliers. Karim casually refers to this as carbon “foodprinting”. Currently, Pacific Arbour is not measuring and does not know how to start measuring the GHG emissions generated from the food they buy for their residences. Unlike utility bills, which show the emissions you generated, carbon foodprinting is a relatively new area to explore.

In this research we will investigate the feasibility of measuring foodprint. What are the implications for changing buying habits? Is there a need to be measuring foodprint? How significant is the improvement? How does it affect the company?

# Measuring the Current Emission of GHG

## Collecting Data From Purchasing Invoices

Studio Technique: Ask, Try, Do



When we were first given the task of calculating the foodprint of Cedar Springs, a Pacific Arbour residence, we wanted to look at the purchase invoices. We were given invoices from Cedar Springs' 7 suppliers beginning in June 2012. Considering this was such a large amount of data and our time constraints, we decided to narrow our focus to the two most recent months of August and September. Furthermore, we also decided to omit food products that were not in their natural state. In other words, food products that had gone through any processing were not included in our data.

To guide our analysis, we used the following Foodprint Calculator created by Landshare.org.

	Energy	Land	Water	GHGs	
Food Type	MJ/ Unit	Ha/ Unit	m3/Unit	kgCO2e/unit	Unit
Alcoholic Beverages	5.18	0.000098	1.73	1.01	kg
Dairy Products	6.55	0.000123	2.42	1.08	kg
Fish	72.73		1.13	3.55	kg
Fruits and Vegetables	7.06	0.000067	2.12	1.38	kg
Grain, Starches & Derived Products	16.44	0.000173	2.1	0.92	kg
Meat & Meat Products (Excl. Poultry)	78.82	0.001352	6.54	10.96	kg
Poultry Meat & Products	34.29	0.00064	2.41	5.76	kg
Eggs	26.04	0.000569	2.47	4.3	kg
Vegetable and Animal Oils and Fats	33.15	0.002621	7.2	0.97	kg
Other Food Products (Incl. Sugar)	23.01	0.000157	1.86	5.44	kg

Cedar Springs uses 7 suppliers: Bear Fruit Produce, Black Forest Meat and Sausage Ltd., Centennial Food Services, Gordon Food Systems, Sysco, Tarson Foods Inc., and Yen Bros Food Services Ltd. In most cases they are able to order a mix of items from every supplier but in some instances, suppliers only specialize in a particular food group.

After analyzing the receipts and invoices for the months of August and September, we discovered some interesting trends and data. Bear Fruit Produce is the supplier used most often, as it is a local market located across the street from Cedar Springs. The chef usually visits this store daily to purchase any fruits, vegetables and herbs needed for the day. He shops there daily to ensure that the fruits and vegetables will be fresh. Other suppliers are used on a bi-weekly basis, where the chef will order enough goods for two weeks. We feel that the current operations are already at an optimal level to maintain excellent food quality.

In order to determine the total foodprint created by Cedar Springs' food consumption, we classified the food items by food group, measured their quantity by weight and then applied the figures to our calculator. However, the foodprint calculator only considers the growing/raising process and does not take transportation into account. When the analysis was completed, we discovered that the approximate monthly carbon foodprint created by Cedar Springs equaled 2675.15 Kg CO<sub>2</sub>e. However, this monthly figure is very conservative considering we have not accounted for processed foods or transportation. Furthermore, we are not able to determine if the current emissions are acceptable or not as there are currently no industry benchmarks.

Carbon foodprint is very hard to measure because there are multiple variables that are beyond the control of Cedar Springs. The only way that Cedar Springs would be able to have accurate data is if they have complete control of the food throughout its lifecycle. However that is quite unfeasible. But if Cedar Springs' suppliers began measuring their impact to the total Foodprint, the overall Foodprint created by Cedar Springs would be much easier to quantify.

# Understanding Cedar Springs Operations



## Visiting the Chef Design Studio Technique: Eye-phone

As part of our discovering process, we met with Chef Joseph of Cedar Springs. Our main goal was to collect information regarding the dining menu and the food suppliers, and observing how the kitchen operates.

### Dining menu:

Cedar Springs provides 3 meals a day for its residents. Each meal includes three courses: an appetizer, a main course and a dessert. Joseph told us, in order to balance the nutrition and taste that senior residents valued, he tried to cover all kinds of meat each week. (Exhibit 1) The menu is always changing, and basically the menu is rotated every six weeks. Meanwhile, in order to reduce the food waste, Joseph makes sure not to serve too much as senior appetites are usually small.

Fish	4 times (2 lunch 2 dinner)
Vegetarian	2 times
Roast meat	Other

### Food suppliers:

To ensure the quality of food, Joseph spends a lot time on choosing food suppliers. He currently uses a variety of suppliers ranging from Bear Fruit Produce, a small grocery market across the street, to big suppliers like GFS. Joe prefers to order meats from Centennial, which he orders once a month. Since it's a medium sized company and Joe has already built a good working relationship with them, it's very cost effective and Joe can contact them easily to give feedback on the quality of meat. Centennial will also inform Joe when there are fresh and new types of meat products that Cedar Springs may need. Joe also emphasized that in terms of seafood choice, he only buys seafood that have Ocean Wise certifications, which ensure the

Quality and sustainability of the seafood. For vegetables, he either orders that from GFS, or sometimes goes across the street to Bear Fruit Produce. At the same time, he says that he is always trying to use as much seasonal and local products as he can. For example he always chooses to purchase fruits from the Okanagan when they are in season. In terms of transporting the food, GFS and Centennial will deliver the order to Cedar Springs, while Joe will drive his own truck to pick up food from the crab shop and Bear Fruit Produce on his way to work.

Food Suppliers	GFS (Main suppliers)	Crab shop	Centennial	Bear Fruit Produce	Bear Fruit Produce (Okanagan)
Type of food	Miscellaneous	Seafood	Meat + seafood	Vegetables	Fruits
Deliver	By suppliers	Joe (own mini truck)- <b>Pick on his way to work</b>	By suppliers	Joe (own mini truck) <b>Pick on his way to work</b>	Joe (own mini truck) <b>Pick on his way to work</b>
Order	Online	Visit	By call	Visit	
Order Frequency	Once a month/ 2 week		Once a month		Seasonal
Cons	Unable to tell it's fresh or not				
Pros	Convenient	Fresh	Price effective	Convenient/ fresh/	
		Ocean wise label	Feedback on the quality of food		

#### Food choice – Seasonal and local

Joe personally prefers seasonal and local food. Local food is always fresh and has higher quality, while the imported food will have longer storage time before getting to customers. He also mentioned that the food supplies also depend on time of the year. In June - October, there are many locally grown vegetables and fruits, therefore seasonal food products become his primary choice while in winter, he has to choose either imported products or greenhouse products

### Facilities:

We visited the kitchen area and did observations using the eye phone method. According to Joe, because Cedar Springs is the newest building of Pacific Arbour's properties, the kitchen facilities are equipped with all the latest energy efficient high-tech products. Also, on the third floor, they have a small greenhouse that grows herbs for the kitchen use. Residents are responsible of taking care of the small green house by watering the plants. Currently, Joseph is considering planting more herbs to fully utilize the space in the greenhouse.

In summation, the chef is doing a great job choosing his supplies by trying to use as much local and seasonal food as possible. Furthermore, using high-tech energy-efficient facilities minimizes the kitchen energy use.



# Learning from industry leader

## Farm to Table restaurant: Fable Kitchen Studio Technique: Assumption Dumption and Prototyping



We wanted to understand how other businesses, specifically restaurants, were sourcing their food and if they were measuring their greenhouse gas emissions. We narrowed our search down to restaurants in Vancouver focused on bringing locally produced food to local consumers. This initiative is commonly known as the Farm-To-Table movement. However, we were unsure how to proceed in contacting these restaurants. Fortunately, we were just learning about prototyping in d.studio and Denise suggested we try role-playing.

Our team decided to act out a scene in contacting the restaurants. We assumed different roles each (Pacific Arbour Head Chef, Restaurant Owners, Farmers) and had to quickly simulate a conversation. Denise challenged us to ask different questions and to reflect on the scenes through several iterations. We were able to transfer this learning over to our real conversations with restaurant owners. Prototyping gave us the confidence to eliminate ambiguities, ask focused questions, and anticipate different responses.

One of our successful restaurant contacts was established Head Chef at Fable Restaurant, Trevor Bird. We approached him initially by tweeting @fablerestaurant. We were then able to have a phone conversation with him asking specific questions such as “Why does Fable promote the Farm-To-Table movement?” and “How does Fable measure its GHG emissions generated from purchasing food?” We were able to reaffirm our understanding of the economic benefits of buying local, but we also learned that many decision makers in the industry would rather focus on than trying to manage controllable variables as opposed to measuring the GHG emissions from the entire food production value chain. Trevor also stresses the importance of building relationships with local producers and educating yourself on the practices of these producers

Established procurement processes are difficult to change and Pacific Arbour is looking for easier, cost effective alternatives to current policies. Perhaps what is necessary is to look at the problem of measuring foodprint differently. One recommendation would be to work on establishing criteria for relationship building with other businesses. Climate Smart has worked with over 300 different businesses and we would argue that some are also concerned about foodprint issues. If we can help Pacific Arbour connect with other businesses interested in this field, they can co-create a solution to tackle this massive problem.

# Recommendations

## Short Term recommendation

### #1 Contact Smithrite for a Cardboard Box Compressor

After the interview with Joseph, we noted that a truck picks up cardboard boxes from Cedar Springs twice every week.

Drawing from our Climate Smart education, we spotted the opportunity to reduce greenhouse emissions. Recently, Van Houtte

received a free cardboard box compressor from the same waste management company as Cedar Springs uses, Smithrite. This allows Van Houtte to reduce the truck frequency to once a month. This would significantly reduce the greenhouse gas emitted by trucks. With the right information, Joseph, the Chef, can request a free cardboard box compressor as well. The next step would be figuring out where to locate this machine.



### #2 Fully utilize the greenhouse

After visiting the kitchen, the chef showed us the greenhouse built on the rooftop of Cedar Springs. Currently, it is filled with herbs used in the kitchen and the residents will occasionally take care of it. As we step into next year, the chef can plan to grow

vegetables as well as flowers. We are not experts in gardening but after some research, here is a list of vegetables the chef can consider to grow in the greenhouse:



Spring	Summer	Autumn	Winter
French Beans	Cucumbers	French Beans	Herbs
Pumpkins	Peppers	Salad Corps	Brussels
Sweet corn	Tomatoes	Calabrese	Onions

While these vegetables are all useful to Cedar Springs, it is also important to balance between the cost of maintaining the greenhouse and the amount of vegetables the chef grows.

# Recommendations

## Medium Term recommendation

### #3 Chef Summit (Co-creation between chefs)

Currently, Joseph is actively communicating with the other chef in North Vancouver. They share ideas, suppliers and best practices among them. We notice that this is a very good initiative and suggest to expand it to other areas of Pacific Arbour as well. In the upcoming years, Pacific Arbour is planning to expand its residences from 4 to 17. It will become beneficial to set up a systematic way to communicate between the chefs. The Chef Summit can be a meeting hosted every two to three months for chefs to share ideas, visit each other's kitchen and to improve on each other's menu. This enables all kitchens to embrace the best practices within Pacific Arbour and provide a consistent food service across all residences.



### #4 Join Green Table Network

Throughout our research, we discovered that the Green Table Network is a group of restaurants and suppliers that support going green. It explores innovative solutions to be more sustainable, making conscious choices, and measuring the results for further improvement. Since Pacific Arbour is the industry leader in going green and supporting sustainability, it would be beneficial to look into this opportunity. They will be able to learn new techniques with food ordering and preparation and will be able to spread their knowledge to other companies.



# Recommendations

## Long Term recommendation

### **#5 Finding related companies in Climate Smart that are interested in foodprint**

After further research in suppliers and restaurants, we noticed the current trend is about eating local and eating green. Pacific Arbour is ahead of its time and measuring food print is not a popular trend yet. With limited bargaining power, it will be difficult for Cedar Springs to request suppliers to provide such information. This gives Pacific Arbour the opportunity to be the industry leader in measuring foodprint. Through Climate Smart, Pacific Arbour can explore companies, especially restaurants, that are interested in measuring foodprint. By partnering up, this will increase bargaining power and will eventually be able to request foodprint information. However, it is important to note that the effort to build such a community may cost more than the value added.



### **#6 Spreading best practices into related residences**

While a Chef's Summit spreads the best practices within the kitchen to other residences, we looked further into the future and saw another opportunity. Building upon the Summit, Pacific Arbour will have 17 residences in the future. With different facilities and locations, it will be beneficial for Pacific Arbour residences to share best practices with each other. This will be more than just kitchen procedures or a cardboard box compressor. In the future, Pacific Arbour can look into sharing practices in other areas including room services, front desk, and certain facilities. This can be done with either a team of individuals analyzing the current processes in their facilities or bringing together the key persons to share ideas. This will create a more standard and congruent experience across the Pacific Arbour brand and could potentially bring up cost saving opportunities.

