CAC Community Amenity Space

#300-5755 Dalhousie Rd.

Vancouver, B.C.

December 19, 2019

Mojan Nozari, Claire Huxtable, Dan Johnstone

Zone D Representatives

UEL Community Advisory Council

Dear Mrs. Nozari, Mrs. Huxtable, and Mr. Johnstone,

Thank you for your attention today. Enclosed is my report entitled, "Recommendations for an Improved Recycling/Waste Reduction Program at the University Village Food Court." As you know, the University Village Food Court resides in Zone D of the University Endowment Lands, on the bottom level of University Village. While providing diverse, cost-effective food to students and UEL residents, it is evident that change must be enacted in order to reduce environmental impact and burden on Vancouver Landfills.

This report focuses on diverting and reducing landfill waste from the University Village Food Court in accordance with UBC's newly unveiled Zero Waste Food Ware Strategy. This will include both recycling food ware and reducing the number of single-use containers produced at the University Village Food Court. This situation is urgent to not only meet the standards of the Zero Waste Food Ware Strategy, but also to also reduce environmental impact.

In this report, I highlight solutions from both a consumer and business perspective and promote the support of the University Endowment Lands for small businesses. I appreciate your time, and if you have any further questions, please feel free to email me at andreecos13@gmail.com.

Sincerely,

Andree Coschizza

Recommendations for a Recycling & Waste Reduction Program at UBC's University Village Food Court

for

Mojan Nozari, Claire Huxtable, and Dan Johnstone
Zone D Representatives for UEL Community Advisor Council

by

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I. Abstract

Located on the University of British Columbia (UBC) campus, the University Village Food Court (UVFC) provides diverse food options for UBC students. However, with the large amount of non-recyclable waste generated, and a poor recycling program, the UVFC sends most of their food ware to Vancouver landfills. Due to their adverse affect on the environment, and with the Zero Waste Food Ware Strategy coming into affect in 2020, the UVFC has significant areas to improve.

The two aspects of limiting landfill waste include recycling existing food ware and reducing the amount of food ware produced. Customer surveys and research into more sustainable food ware indicate that this change is necessary not only to comply with the Zero Waste Food Ware Strategy, but to also reduce environmental impact.

In order to achieve a solution beneficial to both customers and restaurant owners, this report recommends the following changes:

- The implementation of a 3-bin recycling system (waste, organics, and mixed containers), which uses the same colouring as UBC's recycling system and includes pictures and text of sorting regulations
- Support for businesses transitioning to more sustainable food ware
- Proper signage and advertisement informing customers of upcoming changes

II. Working Definitions

The following definitions are used throughout this report:

Food ware: all containers and tools associated with eating (ex. Cups, utensils, plates)

Sustainable food ware: food ware that can be diverted from the landfill and is disposed of in a recycling facility (eg. can be recycled or reused) ("Sustainability")

Recyclable: all items that can be diverted from the landfill, whether it be through compost, paper recycling, or plastic recycling

Degradation rate: the amount to which a material has broken down after a certain amount of time

III. Introduction

Background

As a leading university in climate change action, the University of British Columbia (UBC) has implemented several strategies to reduce waste. In accordance with their Zero Waste Action Plan, UBC is hoping to significantly reduce green house gases associated with waste and divert 80% of landfill waste by 2020 (Campus and Community Planning 3,16). This year, UBC has released an addendum to the Zero Waste Action Plan, entitled: Zero Waste Food Ware Strategy, which intends to limit the amount of waste produced by all food and beverage businesses on the UBC Point Grey Campus (UBC, "Zero Waste Food Ware Strategy" 2).

This Strategy will affect the University Village Food Court (UVFC), which is a popular location for cost-effective, diverse food options on UBC campus. Located in Zone D of the University Endowment Lands and on the lower level of University Village, the UVFC lies in an area governed by the Province of British Columbia and UBC. Although in business for several years, the UVFC's recycling program is lacking, and the food ware does not conform to the standards set by the Zero Waste Food Ware Strategy (coming in to affect in 2020).

The purpose of this report is to make suggestions for the design and implementation of a recycling/waste reduction program at the UVFC. Although the Zero Waste Food Ware Strategy encourages the use of more sustainable food ware, it will be important to ensure that the family businesses have the tools to make the switch, and that the food court itself has a recycling program to take full advantage of such food ware. While UBC's Zero Waste Food Ware Strategy outlines alternatives to non-recyclable food/beverage containers across campus, this report will focus specifically on the needs of the UVFC and suggest an appropriate solution that will significantly reduce waste.

Scope of Report

The UVFC's waste generation can be broken up into two problems. Firstly, the UVFC recycling program currently consists of only two categories: plastic bottles and cans, and garbage; meaning a significant amount of food ware ends up in the landfill. Both a lack of recycling bins, and a lapse in recycling education prompts customers to throw even recyclable food ware (ex. Plastic beverage containers, bamboo chopsticks) into the on-site garbage bins. Secondly, the UVFC produces an abundance of non-recyclable waste, including products such as Styrofoam (eg. polystyrene) containers and plastic bags. Understandably, although Styrofoam has been known to be detrimental to the environment, it is an extremely cheap material that is economically favourable for small businesses.

The following questions will be pursued in this report:

1. What types of recycling programs currently exist at the UVFC? Is it effective?
2. How can this recycling program be made more effective?
3. Are consumers educated on proper recycling habits? How might they be educated?
4. What types of recycling/waste reduction programs exist? Could effective aspects be incorporated into the UFVC?
5. What deters restaurant owners away from more environmentally friendly packaging?
    a. What alternative, more sustainable options are available?
    b. Will these alternatives be cost-effective?

The scope of this report encompasses two approaches to reducing waste; one which limits the amount of waste generated, and another that encourages all waste to be recycled.

Method of Report

These inquiries will be investigated via the following methods:

1. A survey for customers of the UVFC:
    a. To determine level of recycling education
    b. To probe the customer's perspective on recycling initiatives
2. Research into current waste reduction programs:

    a. Are there aspects that could be incorporated?
3. Investigations into more sustainable food ware:
    a. Are they cost-effective?
    b. Are there incentives for businesses to switch?

These methods of inquiry will lead to recommendations for a recycling program that can reduce landfill waste, and support businesses through the transition to more sustainable food ware.

IV. Collected Data

a. Recycling UVFC Waste

Statement of Problem

The current recycling program at the UVFC involves two separate bins: cans and bottles, and waste (Fig. 1). Unlike UBC buildings (which have a four-bin recycling system), there is no option to recycle any food ware on-site. Due to the confined nature of the UVFC, space is an issue when determining adequate recycling bins. Additionally, recycling education must be considered for the specific food ware at the UVFC to be recycled of properly.

Figure 1: Current UVFC Recycling Bins

Data: Poll of UVFC Customers

Customers of the UVFC were asked several questions to determine their food court practices and their perspective on UVFC recycling (See appendix for full survey questions). This survey probes the customer base to determine what types of recycling programs could be effective and any concerns they have about a recycling program.

Firstly, according to the poll, the UVFC has a varying customer base (Fig. 2). Over 2/3 of customers buy food at the UVFC less than 1-3 times/ 2 months, meaning they are not entirely familiar with the food ware generated at the Food Court. Similarly, the food ware that a single person generates 1-3 times/2 months may seem inconsequential.

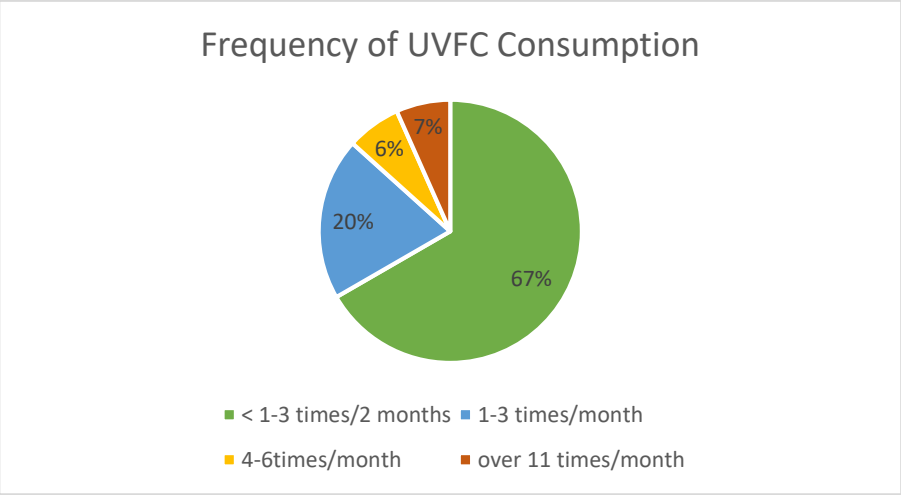

Figure 2: Graph detailing frequency of UFVC visits

Secondly, most sales at the UVFC are made through "to-go" items (Fig. 3). While this is not surprising due to the limited space in the Food Court, this generates more waste such as plastic bags. Additionally, this infers that although recycling bins will be useful for all food consumed on-site, most patrons obtaining food "to-go" will not benefit from these bins.

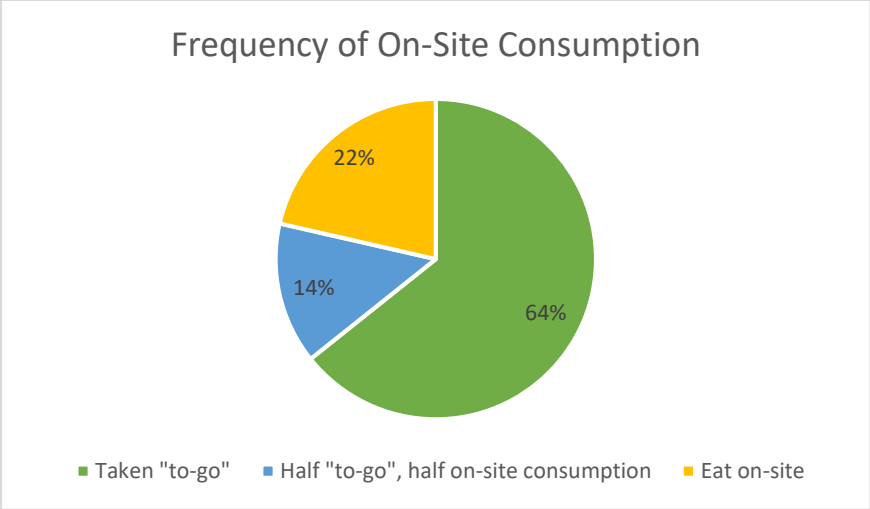

Figure 3: Graph of on-site vs. off-site consumption

This becomes a further concern when one takes into consideration recycling education. Much of the food ware generated at the UVFC is specific enough that consumers may not fully understand how to sort them. This part of the survey tested customer's knowledge based on the four-container recycling system at UBC (Fig. 4), and found that although their knowledge tested quite well, the most confusing aspect seemed to be compost. For example, napkins (60% correct) and chopsticks (65% correct), can both be composted, but were the two lowest scores.

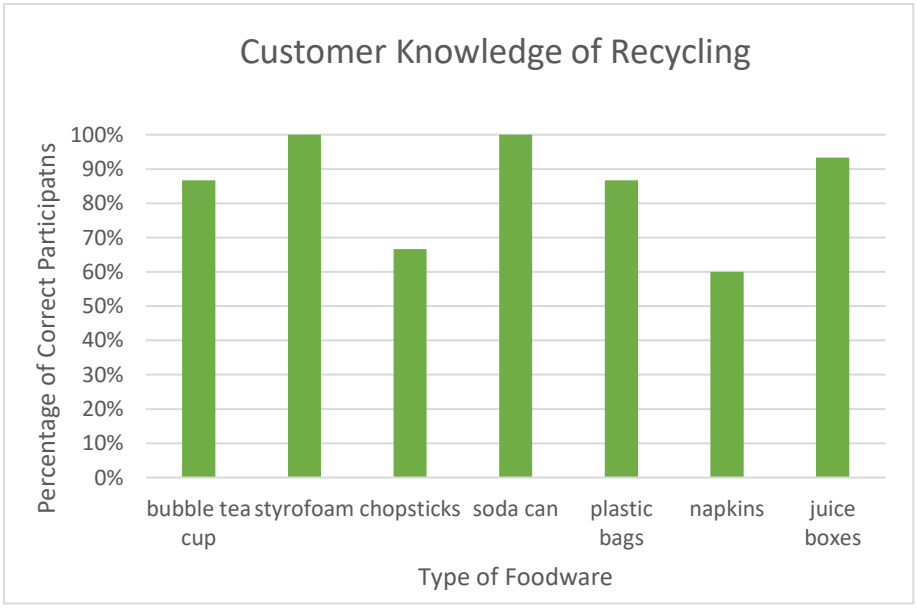

Figure 4: Data collected on UVFC customer's recycling knowledge

However, nearly all participants were adamant that the current UVFC recycling program is ineffective. 93% of customers rated the current recycling program below a 5/10 (1 being not effective at all, and 10 being very effective) and raised several concerns about a potential recycling program, including:

- Recycling education for patrons
- Cost-effectiveness for businesses and customers
- Maintenance of recycling program
- Overflow of bins (a current problem with the waste bin at the UVFC)
- The confined amount of space

Any recycling program must encompass all these concerns and ensure that it makes sense for the space available.

Interpretation of Findings

With the poll data in mind, it is recommended to implement a three-bin recycling system. The above data shows that consumers are already quite familiar with the four-bin system at UBC and implementing a similar program at the UVFC will be compatible with customer knowledge. The bins should be coloured the same as UBC's existing program to avoid confusion.

However, it is unnecessary to include a paper recycling bin at the UVFC due to the low amount of paper waste that is generated. Only clean, unlaminated paper can be recycled, so paper recycling does not even apply to paper food ware such as napkins (organic waste) or laminated containers (landfill waste). Additionally, paper cups can be recycled in "Mixed Containers." In order to conserve space, it is suggested that only the following bins be implemented:

- Landfill Waste
- Organics
- Mixed Containers

This system will be easily assimilated into the curb side pick up as large outdoor bins for these categories already exist at University Village. Therefore, this system will be compatible with existing recycling infrastructure and customer knowledge.

The recycling bins should also include signage containing both words and pictures of how particular items at the UVFC are sorted. This will reduce the chances of customers guessing where food ware goes and ensures that all waste is recycled correctly. Photos especially are quick to read and increase the chances that customers taking food “to-go” also receive recycling information. At least two easily accessible recycling stations will create a straightforward recycling system that is easy for customers to comprehend and follow.

b. Reducing UVFC Waste

Statement of Problem

The second aspect of the problem is that much of the food ware at the UVFC is not recyclable at all. For example, many of the businesses use Styrofoam containers (Fig. 5), which have a degradation rate of less than 1% in the first 90 days in the landfill (Ho). Consequently, even if recycling bins did exist at the UVFC, many of these containers would not qualify for recycling.

It is important to also note that due to the limited space in the UVFC, “for here” or “to-go” options generate nearly the same amount of waste. For many businesses, a “for here” option means a Styrofoam plate instead of Styrofoam box, or the absence of a plastic bag. However, due to the lack of space and consumers that eat food on-site, a full on-site sustainable option (eg. reusable porcelain plates or metal utensils) has been eliminated.

Figure 5: A depiction of the average food ware given "to-go" from a single order at the UVFC

Investigation: Alternatives for Non-Recyclable Containers

UBC's Zero Waste Food Ware Strategy (coming into affect in January 2020), affects all food and beverage companies serving and operating on UBC's Point Grey Campus, and will not allow any non-recyclable food ware by the end of 2020. In this regard, it is beneficial for the UVFC to be looking towards switching to more sustainable containers.

Styrofoam Containers

An investigation was conducted into the cost of switching over to sustainable containers from Styrofoam. The main Styrofoam containers used at the UVFC are: a 9x9" three compartment large container, a 9x6" rectangular container, and a 6x6" small sandwich container (see Fig. 5). While there are multiple companies that create recyclable alternatives to these exact products, it was found that they cost on average 2.6 times more than their Styrofoam counterparts (see appendix for details). For example, a large Styrofoam container could cost 15 cents each, while it's compostable counterpart would cost 42 cents, bought from the same website. Although a far less sustainable choice, Styrofoam is effective for small businesses due to it's low cost, and switching to more sustainable food ware means an added cost for the business owner. In accordance with the Zero Waste Food Ware Strategy, charging a fee of 50 cents for customers buying such a sustainable container will help offset the costs for businesses (UBC Campus and Community Planning).

Straws

Although straws are not common for businesses in the UVFC, Coco Bubble Tea generates a large amount of plastic straws daily. The Zero Waste Food Ware Strategy condemns plastic straws and states that "Bubble Tea straws must meet the requirements… once alternative solutions are available." While bubble tea may still be served with plastic straws, it is important to note that biodegradable bubble tea straws made of bamboo or sugarcane fiber, and even paper straws are available on the market.

Utensils

Although some plastic utensils generated at the UVFC are recyclable, the Zero Waste Food Ware Strategy requires that only compostable wood or plant fibre-based utensils be used.

While the current bamboo chopsticks fit that requirement, plastic utensils will have to be phased out. The Zero Waste Food Ware Strategy suggests a cost of 10 cents per utensil in order to offset the cost of more environmentally friendly utensils.

Investigation: Waste Reduction Programs

By the standards of the Zero Food Ware Strategy, customers will be required to pay a fee for even recyclable containers such as wooden cutlery, paper containers, or paper bags. To avoid these costs, customers will have to bring their own reusable containers.

UBC's Green2Go

Green2Go is a UBC based initative that centers mainly around the Vanier and Totem Park Residence meal plan. To join, students pay $5 to cover the cost of a reusable food container and obtain a Green2Go branded carabiner. This carabiner can be exchanged at the Residence Dining Hall for their meal in a reusable container, with which they save 20 cents on their meal. If a disposable container is used, then the meal costs an extra 75 cents. The reusable container can then be exchanged for another meal container, or another carabiner clip. The main aspect to this program is that containers can be returned unwashed to Green2Go locations, eliminating the washing aspect for the customer (UBC Food Services).

Coffee cup shares

According to a recent article, 2.6 million disposable cups are generated by Vancouverites each week (Chan). A few coffee cup shares have started in Vancouver, including Mugshare. This program works on a $2 deposit system that allows the customer to obtain a reusable coffee cup from a participating shop and return it at any other participating shop to be cleaned. This program is effective in that it increases accessibility to reusable mugs and is of no effort for the consumer (can be returned unwashed at any participating store). Another Vancouver program is Cuppy, which works on a membership scale. With an annual membership of $5, members gain access to Cuppy's reusable mugs which, like mugshare, can be returned at any other participating locations. A unique aspect is that Cuppy works on a positive reinforcement system, offering perks for eco-friendly behaviour, and including an app that reminds the customer to return their cup (Chan).

Interpretation of Findings:

UBC's Zero Waste Food Ware Strategy is a good starting point for businesses to begin thinking about their environmental impact. With the above information in mind, however, it is important that businesses have the tools to take full advantage of becoming more sustainable.

Clearly, there must be support on hand to help businesses switch to more sustainable food ware. Although a customer cost is associated with switching from Styrofoam, there will be a transition period before these businesses can recoup the start-up costs of switching. Small business loans would help offset the initial costs and allow the owners to decide when during the year they would like to phase in the fee. For example, UBC's small business accelerator program can help small businesses acquire loans and can guide business owners to make informed decisions during this transitional period (Small Business Accelerator Program). Additional support is mentioned in the Zero Waste Food Waste Food Ware Strategy, in the form of UBC Sustainability and Engineering staff (UBC, "Zero Waste Food Ware" 11).

In terms of generating less food ware, it is clear from the existing programs that customer involvement is necessary for success. Proper signage around the Food Court will make customers aware of the changes being made and encourage them to bring their own reusable food ware. Especially during the transition period, informing customers will give them time to bring their own containers, and reduce the burden on businesses' start-up costs for sustainable containers.

Moving forward, it will be useful for the UVFC to join a container sharing program such as Green2Go. This will be more convenient for customers and allow businesses to spend less on recyclable containers overall, therefore being economically favourable for businesses. This will also be a sustainable "for here" option, so that on-site consumers can return their dishes as soon as they are finished. However, this will require support from the University Village to acquire an industrial dishwasher, and a unifying of businesses in the UVFC to share this dishwasher.

V. Conclusion

Summary and Overall Interpretation of Findings

From a customer perspective, it is imperative to involve people in a recycling program that is convenient, on-site, and compatible with current resources. As most consumers at the UFVC are UBC students (and with data showing that students are familiar with UBC recycling practices), it is advisable to pattern a recycling program after UBC's four-bin system. Data shows that consumers are concerned about the amount of waste produced at the UVFC and shows that customers would be willing to make a change to sort out waste. In addition, concerns raised by the poll indicate that proper recycling education is essential for a recycling program to be effective.

From the business perspective, UBC's Zero Waste Food Ware Strategy compels businesses to reduce non-recyclable waste by the end of 2020. Being smaller businesses, it is important that they are supported through this transition and have the tools necessary to sustain their business. Family businesses may not have the initial resources to fund start up costs of sustainable containers and may not understand how to implement the customer container fee required by the Zero Waste Food Ware Strategy. Clear messaging is essential for businesses to make informed decisions regarding their sustainability practices. Support from UBC and the University Village will not only clarify the significance of a sustainable food court but allow the UVFC to explore sharing options such as Green2Go.

Recommendations

A two-pronged approach is necessary to create a recycling/waste reduction program at the UVFC; One limiting the amount of waste generated, and the other encouraging good recycling practices. The solution must be beneficial to business owners and be informative to customers. Additionally, solutions must make sense for the diverse environment of the UVFC, and support business owners in any changes.

The following recommendations are made for the UVFC:

1. The implementation of a 3-bin recycling system: waste, organics, mixed containers

    a. Recycling bins should use same colouring as UBC's recycling system to comply with customer knowledge
    b. Recycling bins should include wording and photos of how to sort food ware
2. Support for businesses transitioning to more sustainable food ware:
    a. Loans to cover initial start-up costs
    b. On-site support to fully explain the significance of the waste reduction program, and to guide businesses through the transition
    c. From UBC Sustainability and Engineering and the Small Business Accelerator Program
3. Proper signage informing customers of upcoming changes and encouraging reusable containers

In the future, the UVFC should consider joining a sharing program such as Green2Go. With the support of University Village, this program will be beneficial not only for the environment, but for the businesses and customers as well.

VI. Appendix

a. UVFC Customer Survey

Introduction:

Thank you for taking the time to fill out this form. I am an undergraduate student pursuing a technical writing project, and this survey is to gauge customer's knowledge on recycling practices, and their experience recycling at the University Village Food Court. The results of this survey will be used to create a formal report to determine the feasibility of a recycling/waste reduction program at the University Village Food Court. This survey is comprised of 6 questions, and all responses are completely anonymous and completely voluntary. Thank you in advance, I appreciate your participation.

Questions:

How often do you buy food at the UVFC?

1. 1-3 times/ 2 months
2. 1-3 times/ month
3. 4-6 times/month
4. 7-10 times/month
5. +11 times/month

Of the times you buy food at the UFVC, how often do you take your food “to-go”?

1. Nearly always
2. Half the time I do take away, the other half of the time I eat in the food court
3. Never, I always eat in the Food Court

How effective would you rate the current recycling program at the University Village Food Court? (Rated on a scale of 1-10, 1 being not effective at all, 10 being very effective)

Match up the container to the proper bin. (given four different options for each: waste, mixed paper, mixed containers, food scraps)

1. Plastic bubble tea straws

2. Styrofoam container
3. Wooden chopsticks
4. Soda can
5. Plastic bags
6. Napkins
7. Juice boxes

What concerns might you have about implementing a recycling program at the University Village Food Court?

Any further comments.

b. Alternative Container Research Results

Styrofoam Containers	#/unit	unit cost($/1)	cost/item (cents)	Notes	Company Name
large (9x9), 3 compartment	150	22.49	14.99333		Pactiv, supplybox.ca
rectangle, 1 compartment	200	32.49	16.245		Darnel, supplybox.ca
small (6x6), sandwich	500	32.99	6.598		Darnel, supplybox.ca
Direct Alternative Containers					
large (9x9), 3 compartment	200	83.99	41.995	genpak: compostable	Genpak, supplybox.ca
rectangle, 1 compartment	200	54.99	27.495	genpak: compostable	Genpak, supplybox.ca
small (6x6), sandwich	500	101.99	20.398	genpak: compostable	Genpak, supplybox.ca

Above data taken from: supplybox.ca, Accessed December 9, 2019.

Styrofoam Containers	#/unit	unit cost($/1)	cost/item (cents)	Notes	Company Name
large (9x9), 3 compartment	150	26.64	17.76		Pactiv, nexday
rectangle, 1 compartment	220	27.64	12.56364		Pactiv, nexday
Direct Alternative Containers					
large (9x9), 3 compartment	200	106.68	53.34	compostable	Bridgegate, nexday
rectangle, 1 compartment	250	132.2	52.88	compostable	Bridgegate, nexday
rectangle, 1 compartment	200	109.13	54.565	compostable	ecoguardian, nexday
rectangle, 1 compartment	200	66.98	33.49	compostable	ecoguardian, nexday
small (6x6), sandwich	500	108.11	21.622	compostable	ecoguardian, nexday

*Above data taken from nexdaysupply.ca, Accessed December 9, 2019.

Average Styrofoam Container = (12.61+15.16)/2 = 13.885 cents

Average alternative container = (29.96+43.18)/2 = 36.57 cents

36.57/13.885 = 2.633

Conclusion: average alternative container costs roughly 2.6 times more than Styrofoam container.

VII. Citations

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