

**SPECIAL OLYMPICS CANADA 2014 SUMMER GAMES-  
SUSTAINABLE FOOD MATERIALS  
& WASTE PROCEDURES**

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# **SPECIAL OLYMPICS CANADA 2014 SUMMER GAMES- SUSTAINABLE FOOD MATERIALS & WASTE PROCEDURES**

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## **EXECUTIVE SUMMARY**

This project was about waste management at the Special Olympics Canada 2014 Summer Games being hosted by University of British Columbia (UBC) Vancouver. As UBC has already taken many steps towards becoming a sustainable campus, the goal of this project is to continue in sustainable food practices and decreasing the amount of waste entering the landfills. The research question was: What guidelines can be developed for vendors in order to minimize landfill waste production, specifically from packaging of food and beverages, at the 2014 Games? A Waste Management Guideline for vendors was created together with UBC SEEDS and Food Services. The conduction of interviews with community members was the primary research method to gain knowledge on which materials and products are acceptable and unacceptable at the 2014 Games. Managers from Ze Bite Food Truck, UBC Food Services Product, and Point Grill were a few of the individuals interviewed. Furthermore, literature research helped strengthen the reasoning for why a certain material was placed in one of the three categories of the guideline: Preferred, Acceptable and Unacceptable. A key result found was the capability of the in-vessel to take compostable/organic material and produce an output of fertilizer that is used in the landscaping across the UBC Vancouver Campus. Furthermore, Point Grill restaurant is essentially Zero Waste because of appropriately sorting waste into compostable/organics and recyclables. Therefore, it is feasible to have Zero Waste from the vendors serving at the 2014 Games. Some suggestions for future projects are: (1) posters clearly listing out what items can or cannot be recycled or compostable, (2) standardization of food packaging and utensils across UBC campus, (3) increased promotion of discounts for customers who bring personal reusable food containers, and (4) looking into providing machine washable dishes and utensils that customers will pay a deposit for upon food purchase. A limitation encountered was time and resources. Three months was a short period to tackle a large project; therefore, the research question was immensely narrowed. Furthermore, with shortage of time, a few individuals contacted for interviews were not able to meet within the time frame needed; therefore, information was not collected from those. As well, there were a limited number of members to tackle vast amount of interviews in the short time. The Food and Waste Guideline (Appendix A), will be implemented at the Special Olympics Canada 2014 Summer Games.

## **INTRODUCTION**

Food insecurity, the inability of having healthy and culturally appropriate food, has become an alarming problem amongst many communities due to the lack of sustainable food systems (Withers and Burns, 2013). However, there is an atrocious amount of edible food that, if it was not being wasted annually, could greatly help decrease food insecurity (Abdulla et al., 2013). Sustainability refers to the ability of maintaining natural resources and human well-being while considering the society, economy and environment (McCullum et al., 2005). In 1990, the University of British Columbia (UBC) declared that it would incorporate sustainability into its teaching, research and operations (UBC, n.d.-a). Ever since then, UBC has been modifying its food system such as being Canada's first Fair Trade campus and buying ingredients that are certified organic or local as in grown within 150 miles of the Vancouver UBC campus (UBC, n.d.-c). There is also an in-vessel composter that transforms food waste into compost used for UBC campus' landscaping (UBC, n.d.-b).

The upcoming Special Olympics Canada 2014 Summer Games will be primarily hosted at the Vancouver UBC Campus. UBC intends to use this opportunity to showcase its efforts in encouraging sustainable food practices through decreasing landfill waste. This community-based experiential learning (CBEL) project was to help UBC make that happen. The team consisted of seven students who worked under the project manager, Liska Richer, Project Coordinator of UBC SEEDS and alongside our community partners: Loriann McGowan, Director of UBC Food Services, and Matt Dolf, Director of Special Olympics Initiatives. There was collaboration in creating sustainable food materials and waste procedures for external vendors who will be at the 2014 Games but will not be managed by UBC Food Services. These procedures, provided that they work well, may also be used for future events. This project's outcome stemmed from the

research question: What guidelines can be developed for vendors in order to minimize landfill waste production, specifically from packaging of food and beverages, at the 2014 Games?

## **RESEARCH METHODS**

This project has developed throughout the semester immensely. The first goal was to complete a full cutlery and container review on which materials are not as detrimental to the environment. However, that was a large undertaking, so it was minimized to focus on sustainable packaging of individual lunches. From discussion with the project manager, the goal was changed again to compiling a package for volunteers on how to educate the event attendees in regards to separating waste. With more discussion with the project manager, it was decided the final outcome of the project would be a Waste Management Guideline for all the off campus vendors serving during the games at UBC's Vancouver Campus. The decision to condense the project was due to time constraints.

Preliminary research focused on literature review of specific materials used for several cutleries and packaging. To gain a better insight on which materials are being currently used at UBC Food Service outlets, several interviews were conducted with key individuals involved with UBC Food Services.

As a group, a list of questions (refer to appendix B) was written down which to be answered by all the interviews. The questions were focused on the current waste management at UBC with regards to food related waste such as disposable service wares and food waste. For instance, questions such as how currently waste is being managed by campus vendors, what material is the packaging and cutlery, how food related waste is processed at UBC campus, barriers to reduce waste and potential improvements that can be made toward zero waste were included in the interviews.

A few of the individuals interviewed are: the managers from Ze Bite Food Truck, Point Grill Restaurant, UBC Food Services Product and the chef at Point Grill Restaurant. The questions were modified or omitted from certain interviews to ensure the individuals were only being asked questions which best suited their knowledge on the subject. Furthermore, the answers from each interview were cross referenced to spot any overlap in responses which indicated common Food and Waste Management procedures being currently followed. If a question were not answered adequately in one interview, that question would be focused on with the next individual being interviewed. Six individuals were interviewed to collect data for this research project. It should be noted that ethical approval was sought and received from Tri-Council Policy Statement and every individual interviewed signed a consent form.

In forming of the final Food and Waste Management Guideline for the 2014 Games, a draft guideline titled *Six Steps to Running a Zero Waste Event* was used as reference, provided by the project manager (Liska Richer, November 9th, 2013). Since the guideline would be implemented at the 2014 Games, the draft was used to ensure details were not missed and new aspects were added whilst remaining compatible with the current Zero Waste Guideline.

Lastly, currently enforced UBC waste regulations were reviewed to ensure the guideline clearly stated which materials and products cannot be used on campus. As well, to help create a guideline that is feasible.

## **FINDINGS**

### **Results:**

The primary source of data was the answers recorded from the interviews conducted. Not only were the answers full of valuable data such as how the current UBC waste system functions, but also brought forward the idea of visiting the UBC in-vessel composter located on Vancouver campus.

The current vendors for UBC Food Services purchase all packaging and utensils from Biodegradable Services or have products from a different company tested through the system. Furthermore, through literature review and interviews, it was found multi-composite materials and polymers are not compatible with UBC's current Waste Management Program. As well, the in-vessel processing does not guarantee 100% of the input will result in fertilizer material because of the time processing through the machine, some of the products do not fully degrade; therefore, will enter the waste stream.

Lastly, from the meeting with UBC Food Services Product manager and Point Grill manager, it was noted PET 6 plastics are not recyclable on campus; therefore, cannot be distributed by vendors on campus. UBC's third party contractor hauls off all the plastics and metals. Also, aluminum foil and all glass are recyclable. An interesting point made by the Point Grill Manager was that the only non-recyclable or compostable waste produced by the entire restaurant, including kitchen prep, is a foam paper packaging and sanitary bathroom napkins. Point Grill is essentially zero waste because of requests such as having fish vendors deliver products in cardboard versus Styrofoam.

In creating the Food and Waste Guideline for the 2014 Special Olympic Games at UBC Vancouver, majority of the information was gathered from interviews. To conclude which material fit into one of the three categories (Preferred, Acceptable or Unacceptable), information gathered from the interviews and the current guide for Schaefer bin separation was used.

### **Discussion:**

It is evident there needs to be a balance between an ideal zero waste event and a reduced, environmentally sustainable food packaging and utensils entering the waste stream. From the multiple interviews conducted, a too stringent guideline may not be the most feasible nor appealing to the potential incoming vendors at the 2014 Special Summer Games. Therefore, the guideline was created in a manner to be clear on which products are not compatible with the current initiatives at being a Zero Waste Campus and which materials can be utilised to not stray from the future goal.

The limitations faced in the methods were time constraints, and the knowledge the individual being interviewed possessed. With more time, questions could have been further developed and more interviews would have been conducted. Not only was the information limited based on the person's knowledge of the subject, but as well, there could have been bias. Furthermore, a few interviews were not conducted since there was no response in regards to setting up a time for the interview. Limitations in the project is that providing guidelines are the initial steps towards reducing waste however, more awareness is required for full effectiveness. The guidelines are mainly catered to food vendors, whereas the consumers ultimately dictate where the waste goes into the waste stream.

Strictly abiding by the guideline's categories will yield different results. Following the preferred category will be most environmentally friendly. This is due to the implications of materials, having an effect on the environment. In the preferred category, all materials are reusable. The use of metal cutlery is the best option because fewer resources are

depleted ([Ecoistituto del Piemonte, 2002](#)). The environmental impact to produce the material will be less than the other categories. Strictly following the acceptable category leads to materials being compostable or recyclable. Here, energy is recycled back into the environment as compost and into the system as recycled plastic. Lastly using the unacceptable category means that the waste is not recyclable and is disposed of in landfills or incinerated without energy recovery (Razza *et al.*, 2009).

Other studies have shown that switching to and using biodegradable and compostable materials is the most preferred solution to the waste stream. As compost is used as fertilizers a high quality compost is usually the goal. As biodegradable and compostable materials provides little nutrients to the compost, a mixture with organic matter is usually required to bring the quality of compost higher (Razza *et al.*, 2009). This finding supports the information gathered and compiled into the guidelines.

Following the guidelines by staying within the preferred and acceptable categories will yield beneficial effects on the environment. The relationship of the guidelines towards environmental sustainability is in terms of landfill and compost. It is quantified through greenhouse gas emissions in terms of CO<sub>2</sub>. The guidelines will try to put the materials into the right waste stream. Composting is a simpler and effective method of reducing green house gas emissions than landfill (Lou and Nair, 2009). The guidelines help facilitate more materials going into the compost thereby reducing the amount of greenhouse gases, this leads to having less materials going into the landfill, which indirectly lowers greenhouse gas emissions, leading to a more sustainable environment.

### **CBEL/Flexible Learning Reflection:**

Community-based research contributed to the CBEL project in several ways. To gather information on what material packaging is used for food, interviews were held with community members, for instance UBC Food Services employees. The answers from the interviews were vital to constructing the Food and Waste Guideline for the 2014 vendors.

A take way learnt from community-based research is to assess all limitations of a projecting prior to pursuing it. Since the first research question was too broad, the limitation of time and resources impeded the group on following through. Therefore, a more streamlined objective was chosen: to create a waste guideline for vendors to comply with in the Special Olympics Canada 2014 Summer Games. The importance of remaining unperturbed during difficult circumstances and the significance of communication was highlighted through the community-based research.

The blog was a valuable since it tracked the progress of the CBEL project over the three months. Furthermore, the blog brought forward more reflection on how to continue improving the project. The e-lectures were a valuable because different perspectives were presented on the topics discussed in class. As well, the e-lectures were engaging since they were far more concise and shorter compared to physical lectures. Despite the challenges over the past three months, the objective of the CBEL project of producing an informative guideline for food vendors was met.

## **RECOMMENDATIONS AND CONCLUSIONS**

### **Recommendations:**

- Posters or displays be put up throughout campus to help students easily visualize what items can or cannot be recycled. This is especially important, because contamination between food wastes and plastics will lead to increased wastes being passed down into the landfill.
- Further promote the idea of reducing packaging waste production by getting more vendors to provide discounts to those who bring personal food containers or by providing machine washable dishes and utensils with an additional deposit upon food purchase. In addition, advertising to students about the existence of these programs would help to decrease waste production.

### **Potential CBEL Research Projects:**

- To research on what happens to the waste after they are carried away from the Schaefer bins. This would entail looking at how in-vessel composting system operates at UBC as well as issues that arise during composting due to composition of packaging or utensil that we using. Researching on the current waste operation could highlight areas of improvement with our current waste disposal system. Its importance also lies in being able to provide a holistic view of our current waste system that fills in the current knowledge gaps many people about what happens to the waste after it is created.
- To assess how much UBC students know about what is or what's not compostable or recyclable as well as how correctly they are following the composting system. This would provide insight as to the current knowledge gap that students have with our waste disposal system, along with what aspects of recycling or composting need to be emphasized.
- To design ways from which those in the UBC community could be actively engaged in learning about the current system of recycling at UBC.

### **Conclusion:**

In spite of energy recover technologies such as pre-composting of waste prior to land filling and landfill capping, greenhouse gas emissions produced from landfills have been found to be higher than the emissions produced in composting facilities (Lou and Nair, 2009). Consequently, production of greenhouse gas from landfills is still a contributor to global warming and climate change. Climate change has been projected to be a threat to food security by negatively impacting the availability, accessibility and stability of the food supplies (Schmidhuber and Tubiello, 2007). Consequently, decreasing waste production can indirectly enhance global food security, as atmospheric greenhouse gas emissions are reduced. Our research objective was to try and determine the most sustainable option for packaging and utensil material. Overall, our finding was that the most sustainable option for packaging and utensil material (besides reducing waste production) would be the items that are recyclable or compostable in UBC's current waste disposal system.

Through interviews, we compiled information on what food vendors should do to reduce:

1. Waste production that arise from improper disposal of items
2. Unnecessary production of waste from packaging and utensil choices

In conclusion, in creating a guideline that outlines more sustainable packaging/utensil choices, methods of waste disposal and tips on how to reduce waste, we hope that to help to reduce the production of landfill waste in the 2014 Special Olympics as well as future events held at UBC, which would in turn help contribute to increased food security.

**APPENDIX A**

**FOOD AND DRINK PACKAGING GUIDELINES**

<b>ITEM</b>	<b>PREFERRED</b>	<b>ACCEPTABLE</b>	<b>UNACCEPTABLE</b>
<b>Plates</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Non plastic coated compostable paper plates</li> </ul>	<ul style="list-style-type: none"> <li>• Styrofoam</li> <li>• Plastic coated paper</li> <li>• Cardboard</li> </ul>
<b>Cups</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Paper coffee cups</li> <li>• Recyclable plastic cups for cold drinks marked with numbers 1-5</li> <li>• Glass Bottles</li> </ul>	<ul style="list-style-type: none"> <li>• Styrofoam cups</li> <li>• Plastic cups marked #6 or unmarked</li> </ul>
<b>Utensils</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Recyclable plastic utensils marked with numbers 1-5</li> <li>• Compostable wood utensils including plain wood chopsticks &amp; toothpicks</li> </ul>	<ul style="list-style-type: none"> <li>• Non-recyclable utensils or unmarked utensils</li> <li>• Compostable plastic or biodegradable plastic utensils</li> </ul>
<b>Wrapper (e.g., sandwich or pita wrapper)</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Unwaxed, compostable paper wrappers</li> <li>• Metals (Ex. Aluminum Foil)</li> </ul>	<ul style="list-style-type: none"> <li>• Waxed paper wrappers</li> <li>• Sponge plastic wrappers</li> <li>• Saran wrap</li> </ul>
<b>Other containers, boxes and trays</b>	<ul style="list-style-type: none"> <li>• Reusable trays and totes</li> <li>• Reusable metal bins</li> </ul>	<ul style="list-style-type: none"> <li>• Cardboard trays or boxes</li> <li>• Recyclable plastic trays or containers marked with numbers 1-5</li> <li>• Tetra-Packs</li> <li>• Juice Box</li> <li>• Cardboard</li> </ul>	<ul style="list-style-type: none"> <li>• Plastic trays or containers marked #6 or unmarked</li> <li>• Milk Cartons</li> </ul>



## APPENDIX B

### Interview Questions

#### 1. PLASTIC RECYCLING:

What types of plastics are recyclable at UBC?

Are plastic bags recyclable in the recycling stream? (e.g., 6 is non-recyclable so are plastic bags are disposed of in the garbage?)

Are bottle caps recyclable?

2. Could you elaborate on the categories in the Schaefer bins and what are some common items that can or can not be placed into each category?
3. What should we watch for when consumers put waste in the recycling or composting bin? (e.g, no plastics or adhesives in the composting bin or else the bin can not be composted, food must be rinsed out plastic containers before recycling because traces of organics may render the whole batch not recyclable)
4. How can we identify a multi-composite item? (e.g., Tetra Pak, yogurt containers, milk containers)  
What are some common multi-composite materials used in packaging and or utensils?
5. How does the in-vessel composter work? (i.e., how is it operated, what does it do, how long does it take to compost?)  
Are materials containing polylactic acid suitable for the in-vessel composter? And are any other special materials?
6. What should food vendors do when they do not know where their waste should go in the Schaefer bins?
7. Are chopsticks, toothpicks, saran wrap, aluminum foil, and ziplock bags compostable?  
Is there a general rule food vendors can follow when determining the appropriate bin the materials go?
8. Our understanding is that only composting is done at UBC, and plastics and paper are hauled off campus. If there are more systems, please describe them and what their limitations are.
9. Who currently supplies the products that are approved for the in-vessel?  
For each respective company, what utensils and packing material do they supply? (e.g., chopsticks, spoon, knives, etc...)
10. What is the complete list of unaccepted materials for packaging? (e.g., Styrofoam, PET plastics, #6 plastics)
11. What are some suggestions you think would help decrease waste production for food vendors when they are considering packaging and utensils? (e.g., bulk dispensers over individual).
12. What are some common mistakes when recycling or composting things in the Schaefer that you have noticed?
13. Does all packaging that are foreign to the UBC in-vessel have to be tested before they are allowed, or do common materials such as paper plates not have to be tested?
14. Is setting up a separate container for Tetra Pak possible?  
Why or why not?
15. What factors do you consider when you choose packaging material?
16. What are some food vendor's opinions about the Zero Waste Guideline?
17. How do you food vendors manage your waste?
18. What is your current waste system?
19. What regulations do you have to follow?
20. What materials do you use for utensils?  
Why these materials?
21. Is most of your preparation done inside or outside the foot truck?
22. Would it be practical for food trucks to compost their food scraps in the in-vessel system at UBC?
23. Is your waste disposal done inside or outside the truck?
24. Do you think it's reasonable to have all food vendors have only a few types of packaging materials to choose from?  
(e.g. reusable, recyclable, or compostable)
25. How do you feel about using Schaefer bins rather than regular bins?
26. Do you use bulk dispensers for your condiments?  
Why or why not?

## APPENDIX C

### Group Member Personal Reflections

Caitlyn learned that teamwork and effective communication are both important when working on a group project. Everyone is different in his or her own way. Everyone has his or her own likes and dislikes and personality traits. But when working as a group, it is important to communicate effectively to get your point across. As in many cases, we are more likely to be understood by others if we learn and respect the opinions of others. Through this, teamwork can be established and thus a task can be carried out efficiently.

Wilford expressed the one thing he learned most is how difficult it was to coordinate many different personnel into one project. The time lag between email replies led the progress of the project to move slower than he expected. In addition, having the opportunity to be part of something that will actually be in use really improved his teamwork and organizational skills in his opinion. Another critical part was the flexible learning portal, which included the e-lectures. Wilford believes the e-lectures really gave him a different perspective in what we were learning in class. He also thought it was easier to understand because it was concise and shorter.

Lydia voiced that blogging, as a part of this year's CBEL project, was a good way of learning how to record our progress in an interesting manner so that others want to read it. One part that she found frustrating was how we had to write a post for every single week because for us, some weeks had more progress, and others had less. Thus, the blog posts were sometimes repetitive since there wasn't anything new to say. Nevertheless, looking back at the blog, it's amazing to see where we first started and where we are now; it is a great achievement! To her, the blog is like our project's diary, showing our ups and downs throughout these past 3 months. But despite the difficulties, in the end, we successfully completed this CBEL project with a waste guideline for vendors.

Ann reveals that one of the most important lessons she learn is to thoroughly analyze our limitations before stepping into the project, making plans on how the project is to proceed and what our research question is. We began our project with many ideas about how we would create a guideline, outlining sustainable packaging and utensil material, spreading knowledge about UBC waste disposal system to others in an engaging way and determining food packaging and shipping methods to minimize waste production. However, we realized that we were too limited in our time to achieve all these goals, and that the idea of what is and is not sustainable would ultimately depend on how UBC waste streamline operates. Overall, limitations that we should have more quickly acknowledged as in limitations of time, research articles available for our analysis, and realizing what we could and could not have an influence on.

Susan believes that the CBEL project enhanced the knowledge of the food system and life experience. She found that the concepts she learned from lectures are inextricably linked with the CBEL project. Being able to apply the concepts into the CBEL project reinforce what she learned from lectures. She also learned that management is very important when doing a group project. Since the group is consisted of seven students with different schedules, an effective management will ensure even work distribution across all group members.

Ricky thought that this project was a great learning experience. It was his first time working on a group project that involved guidance from this many sources. We had to meet up with a project manager and planners of the Summer Olympic 2014 Games. Working with these mentors gave him a sense of professionalism in the project, which made him take the project more seriously. They pushed us into creating an idea that would be lasting and have an impact on future projects. After completing this project, he felt that he has grown in many ways: staying calm during stressful situations,

constantly learning by putting away his ego and improving his communication skills through working with many different people. Generally, Ricky believes that he has learned many things about the world outside of university and himself.

Gurleen was ecstatic to be a part of a project that went beyond the walls of the classroom and simply achieving a good grade. This project was unique because what the group would be completing is going to be implemented. Furthermore, she was proud to be a part of the Olympic Games, even if it was a small role compared to the athletes competing. Even though the project goal itself was appealing, the process leading to the outcome was confusing. Gurleen hopes the rubrics are finalized before the course begins as well there be more one on one communication with the T.A.s since she found Gladys' feedback to be essential to the group's success and completing CBEL.

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# **UBC Vendor Food Waste Management Guidelines**

## **Special Olympics Canada 2014 Summer Games**

The University of British Columbia (UBC) is aiming towards becoming a “Zero Waste” campus in that the amount of waste produced is composted and recycled locally. To continue in the direction of zero waste, all vendors for the Special Olympics Canada 2014 Summer Games at the UBC venue are being asked to adhere to the following Waste Management Guideline.

### **UBC Waste Context**

At UBC, the four areas in which waste is produced most are: food leftovers, paper, recyclables and garbage. To ensure the amount of waste entering the landfills is minimized, there has been a remodel of the materials and products purchased associated with food as well as managing the waste. The previous model done by Ivana Zelenika called the Zero Waste Guideline, is UBC’s own in-house waste management procedures and this Food Waste Management Guideline further adds to it.

UBC has been replacing garbage bins across campus with a new waste sorting system called Schaefer bins. The aim is to replace all the garbage bins with Schaefer bins by September 2014. The Schaefer bins are unique because it is divided into four sections: food waste, recyclable containers, paper and anything left (ie. Garbage for the landfill). With these new bins, the amount entering the landfill should decrease because plastics and papers are recycled while food scraps and compostable items are processed at the in-vessel composting facility located at the south end of UBC Vancouver campus. The in-vessel turns organic waste and compostable items into fertilizer, which is used for all landscaping across UBC Vancouver campus.

Thank you for participating in the Special Olympics Canada 2014 Summer Games and helping UBC Vancouver work towards becoming a Zero Waste Campus.



## FOOD AND DRINK PACKAGING GUIDELINES

ITEM	STRONGER	ACCEPTABLE	UNACCEPTABLE
<b>Plates</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Non plastic coated compostable paper plates</li> </ul>	<ul style="list-style-type: none"> <li>• Styrofoam</li> <li>• Plastic coated paper</li> <li>• Cardboard</li> </ul>
<b>Cups</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Paper coffee cups</li> <li>• Recyclable plastic cups for cold drinks marked with numbers 1-5</li> <li>• Glass Bottles</li> </ul>	<ul style="list-style-type: none"> <li>• Styrofoam cups</li> <li>• Plastic cups marked #6 or unmarked</li> </ul>
<b>Utensils</b>	<ul style="list-style-type: none"> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Recyclable plastic utensils marked with numbers 1-5</li> </ul>	<ul style="list-style-type: none"> <li>• Non-recyclable utensils or unmarked utensils</li> <li>• Compostable plastic or biodegradable plastic utensils</li> <li>• Compostable wood utensils including plain wood chopsticks &amp; toothpicks</li> </ul>
<b>Wrapper (e.g., sandwich or pita wrapper)</b>	<ul style="list-style-type: none"> <li>• None</li> </ul>	<ul style="list-style-type: none"> <li>• Unwaxed, compostable paper wrappers</li> <li>• Metals (Ex. Aluminum Foil)</li> </ul>	<ul style="list-style-type: none"> <li>• Waxed paper wrappers</li> <li>• Sponge plastic wrappers</li> <li>• Saran wrap</li> </ul>
<b>Other containers, boxes and trays</b>	<ul style="list-style-type: none"> <li>• Reusable trays and totes</li> <li>• Reusable</li> </ul>	<ul style="list-style-type: none"> <li>• Cardboard trays or boxes</li> <li>• Recyclable plastic trays or containers</li> </ul>	<ul style="list-style-type: none"> <li>• Plastic trays or containers marked #6 or unmarked</li> <li>• Milk Cartons</li> </ul>



metal bins

marked with numbers

1-5

- Tetra-Packs
- Juice Box
- Cardboard

## How to Meet the Guidelines:

### REGARDING PACKAGING/UTENSIL PROCUREMENT

- Buy food packaging from ASPENWARE and BIODEGRADABLE SERVICES. Products from both of these companies are compatible with the in-vessel composting system located at UBC.

<http://aspenware.ca>

<http://www.earth-to-go.com>

- Avoid using food packaging that is non-compostable or non-recyclable.
- Choose food packaging and utensils that adhere to the standards while maintaining customer satisfaction.

### REGARDING WASTE DISPOSAL

- Any paper wrappers or napkins that are soiled are disposed as waste.
- If there is uncertainty in which section of the Schaefer bin an item should be disposed of (nor is it listed in the Sorting Guide), the item in question should be disposed in the “waste” section.

### SUGGESTIONS TO DECREASE WASTE PRODUCTION

- Provide only minimum packaging and utensils. Additional packaging or utensils should be given when a customer requests it.
- Use bulk dispensers rather than individual packets for condiments (eg. soy sauce, ketchup, mustard)
- To sort out waste correctly, please visit



[http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet\\_plastics.pdf](http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet_plastics.pdf)

- If possible, have an organics or food waste bin which can be emptied into the in-vessel composter
- All adhesives must be removed from food wastes that are to be composted. Otherwise, the entire bin of food waste is rendered non-compostable. (Stickers on fruits or labels on compostable containers).
- Avoid using individually wrapped products such as straws and cutlery.
- Sell milk in glass bottles rather than in cartons because milk cartons cannot be put under “paper recycling”; it goes into the garbage.

## **I. PROJECT OBJECTIVES**

. Our research objective was to create a guideline that would help vendors minimize food packaging and utensil waste production. Consequently, our final guideline included information on the types of packaging vendors should choose, how food and wastes are to be disposed of on campus as well as tips on how to prevent unnecessary waste production.

## **II. THE WIDER SUSTAINABILITY STRATEGY IN CREATING A GUIDELINE FOR FOOD VENDORS**

The production of packaging and utensils alone requires energy and entails the release of air pollution, solid waste production as well as the consumption of natural resources such as water and oil. In addition, transportation required for the shipping and disposal of these products further generate waste production and the release of greenhouse gas. For example, the process of paper production is relatively simple compared to that of plastics and other materials. However, pulp and paper production is considered a major contributor of greenhouse gas<sup>1</sup>. For every 1000 tons of paper produced from pulp and paper processing,  $8 \times 10^6$  of carbon dioxide,  $5.5 \times 10^3$  lb of carbon monoxide,  $2.7 \times 10^3$  lb of methane/ sulfur dioxide and  $1 \times 10^3$  lb of nitrogen monoxide and nitrogen dioxide are produced<sup>1</sup>. In addition, paper production requires about 324 litres of water is used to produce 1 kg of paper<sup>1</sup> and may lead to loss of biodiversity, nutrient leeching into waterways<sup>2</sup>, soil erosion and changes in soil composition<sup>3</sup>. The level of energy, natural resources consumed as well as solid waste and air pollution released during the production of packaging and utensils is immense. Consequently, by implementing a food waste management guideline for food vendors, the primary sustainability strategy is to decrease the production of waste that is transferred to the landfill by increasing the use of recyclable utensils and packaging, as well as to prevent the unnecessary production of food and packaging waste.

## **WORKS CITED**

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<sup>2</sup>Sharp, Harrington and Freeman, Scott. Biological science. 3rd ed. San Francisco: Pearson/Benjamin Cummings, 2008. Print.

<sup>3</sup>"Status of soil acidification in North America." *Treesearch - Forest Service Research & Development*. N.p., n.d. Web. 30 Jan. 2013. <<http://www.treesearch.fs.fed.us/pubs/13802>>

<sup>4</sup>Lou, X. F., & Nair, J. (2009). The impact of landfilling and composting on greenhouse gas emissions—a review. *Bioresource Technology*, 100(16), 3792-3798. Retrieved from <http://www.sciencedirect.com.ezproxy.library.ubc.ca/science/article/pii/S0960852408010572>

### III. SUGGESTIONS

#### A. PERTAINING TO THE GUIDELINE

Throughout the duration of the project, we have noticed that many food service stores use utensil and packaging materials that are non-recyclable by UBC's current recycling and composting system. Consequently, in addition to implementing the guideline for the 2014 Special Olympics, we suggest that the guideline be provided to all food service stores throughout campus, so that restaurant managers switch to recyclable materials. Furthermore, the guideline can be used for future events that are held on UBC campus.

#### B. NOT PERTAINING TO THE GUIDELINE

##### 1. Promote student's to bring their own food containers

During our interview, we found that the food containers and wooden utensils being used on campus are only partially composted, and subsequently still end up being shipped to the landfill. In spite of energy recover technologies such as pre-composting of waste prior to land filling and landfill capping, greenhouse gas emissions produced from landfills have been found to be higher than the emissions produced in composting facilities<sup>4</sup>. Consequently, we suggest that more emphasis be put on reducing the use of food packaging by providing incentives for students to bring their own containers as well as making the existence of these programs more accessible to students and generating awareness on the positive environmental impact that the use of re-useable containers may bring.

##### 2. Have food service restaurants provide information on how the packaging/utensils are to be disposed of

During our interview with Ivana, the coordinator of the Zero-Waste Program, we touched on the issue of how students are often confused about which items are or are not recyclable, as packaging items are not standardized throughout campus. While standardization of packaging utensils would help students be able to identify which

items are/are not recyclable, we believe that another more implementable alternative to this would be to have each restaurant post up which packaging and utensils are recyclable and compostable.

#### IV. EXPLANATION FOR WHAT IS WRITTEN IN THE GUIDELINE

##### ITEM CATEGORIZATION INTO “UNACCEPTABLE, PREFERRED AND STRONGER”

**Items in “Unacceptable”** are items found to be non-recyclable and non-compostable by UBC’s current waste disposal system. This information was sourced primarily from UBC’s Schaefer waste disposal guideline([http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet\\_plastics.pdf](http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet_plastics.pdf)) as well as during our interview with Ivana.

**Items that are preferred:** Items that were found to be compostable or recyclable by UBC’s current waste disposal system. This information was sourced primarily from UBC’s Schaefer waste disposal guideline([http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet\\_plastics.pdf](http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet_plastics.pdf)) as well as during our interview with Ivana.

**Items that are “stronger”** are ones that are re-useable. This is, because the process of packaging waste disposal requires transportation, processing which entail further greenhouse gas production and environmental damage. In addition, often most often, not 100% of waste is able to be recycled (X), so overall prevention of packaging waste production would be the best option.

##### REGARDING PACKAGING/UTENSIL PROCUREMENT

Buy food packaging from ASPENWARE or BIODEGRADABLE SRVICES. Products from both of these companies are compatible with the in-vessel composting system located at UBC.

**Reason:** Having food vendors choose packaging and utensils that were compostable in UBC’s in-vessel system was a requirement that was brought up during the meetings. Interestingly, during our interview with the manager of Ze Bite food truck, we found that having compostable packaging material was also a requirement for food trucks in Vancouver. In order for packaging/utensil to be compostable in our in-vessel system, they can alternatively be tested to see if it is compostable in our in-vessel system.

Choose food packaging and utensils that are thin.

**Reason:** As suggested by Ivana during our interview, choosing packaging materials that are thin but still functional for containers, cups and utensils will help reduce waste production during disposal.

##### REGARDING WASTE DISPOSAL

1. Any paper wrappers or napkins that are soiled are disposed as waste.

**Reason:** Although some food-soiled paper products are allowed, too much food-soiled paper products will render the batch unrecyclable, and so it is preferable to deter the vendors from recycling soiled products than to have recyclable paper enter the landfill due to food-waste contamination.

2. If there is uncertainty in which section of the Schaefer bin an item should be disposed of (nor is it listed in the Sorting Guide), the item in question should be disposed in the “waste” section.

**Reason:** As reaffirmed by Ivana, improper disposal of waste can lead to the entire bin of compostable or recyclable material being diverted into the landfill waste stream, and so , it is better for people to throw the item in the waste rather than risk the entire batch of items being thrown out. .

## SUGGESTIONS TO DECREASE WASTE PRODUCTION

Provide only minimum packaging and utensils. Additional packaging or utensils should be given when a customer requests it.

**Reason:** As suggested by Ivana during our interview, providing extraneous packaging/utensils such as additional napkins, wrappers and utensils will decrease the excess waste production from taking more than what is needed.

Use bulk dispensers rather than individual packets for condiments (eg. soy sauce, ketchup, mustard)

**Reason:** To decrease additional production of packaging waste

To sort out waste correctly, please visit

[http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet\\_plastics.pdf](http://sustain.ubc.ca/sites/sustain.ubc.ca/files/images/campusInitiatives/Sort%20it%20Out%20-%20Info%20sheet_plastics.pdf)

**Reason:** It is important for food vendors to familiarize themselves with how food waste is disposed of, because the effectiveness of any recycling and composting system is dependent on how well it is being followed.

Each vendor should have posters indicating how packaging waste and utensils are disposed of

**Reason:** Every vendor may be using different types of utensils and packaging material, so it is often unclear to customers which items are or are not compostable. It is important for customers to know how food waste is disposed of, because the effectiveness of any recycling and composting system is dependent on how well it is being followed.

If possible, have an organics or food waste bin which can be emptied into the in-vessel composter

**Reason:** This is for the convenience of the vendor, so that they do not have to keep on going back and forth to empty out waste each time it is produced.

All adhesives must be removed from food wastes that are to be composted. Otherwise, the entire bin of food waste is rendered non-compostable. (Stickers on fruits or labels on compostable containers).

**Reason:** Adhesives are non-compostable

Avoid using individually wrapped products such as straws and cutlery.

**Reason:** To decrease unnecessary waste production from wrappers. Containers holding straws/utensils as well as dispensers are possible alternatives to individually wrapped items.

Sell milk in glass bottles rather than in cartons because milk cartons cannot be put under “paper recycling”; it goes into the garbage.

**Reasons:** Sell items whose packaging can be recycled or composted in order to minimize landfill waste production.