

December 15, 2006

Greening the Festival of Trees

ERST 334: Food Systems

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Table Contents

Introduction

Schedule

Section 1: Waste Audit and follow-up

Section 2: Compost Issues

Section 3 Food Issues

Section 4: Packaging Issues

Conclusion

References

Appendices

Introduction

During the week of November 21 through the 26th, four students from Trent University carried out an audit titled "Greening the Festival". The festival in question was the Peterborough Festival of Trees now in its 16th year. The festival has raised over 4 million dollars for local charities in Peterborough. With such a large commitment to the Peterborough community this year the festival felt compelled to examine its environmental impact on the community. The research was broken down into four subsections being: waste, compost, packaging and food. While the main focus of this year's festival committee was the waste production of the festival. This report intends to examine all practices leading to the production of waste at the Festival of Trees. An individual student they were divided up as follows Rein Tammemagi- Waste, Emily Brady- Compost, Jonathon Loycker- Food, and Amanda McLachlan- Packaging examined each specific section. **Each specific section was covered in detail throughout the rest of the report. The majority of this project was covered through a hand on approach.** Each student spent approximately ten hours at the festival carrying out various aspects of the project. From an environmental student's perspective the scope of this project is to go beyond general conclusions of waste management and waste production and incorporate food security issues with new programs and technologies giving the festival the most dynamic waste management practices.

Schedule and Festival Events

- October 17 - Meet with organizers to discuss and agree on contract
- November 2 - Sign contract /Hand in proposal
- November 2 -19 - preliminary research
- November 19 - Visit Memorial Centre, orientation
- November 20 - Chair's Meeting
- November 21- festival starts - Preview Gala
- November 22-Family Night
- November 23 - Heritage Breakfast/ Fashion Show
- November 24 - Celebrity Lunch
- November 25 - Children's Fantasy Breakfast/ Auction Night
- November 26 - Festival Gospel Tidings
- December - write up report
- December 15 - Hand in Written Report

December – report to Festival of Trees on findings

Waste Audit and Follow-Up

Assessment / Findings

Two waste audits were carried out each day of the festival and adhered to the following procedure:

1. Record what garbage is audited:
 - The location it's taken from
 - The time it is taken
 - Take two bags from two different locations
2. Spread a tarp on the floor
3. Weigh 3 bins (garbage, recycling and compost) while empty
4. Weigh the 2 garbage bags to be audited
5. Remove all garbage from bag onto tarp and sort into 3 categories: garbage, recycling and compost
6. Record the contents/items in the 3 categories
7. Weigh each bin after corresponding waste has been placed in it
8. Record weights in a chart
9. Replace all items used back into its bin, and place garbage bags and recycling in their appropriate receptacles behind the building.

After performing daily waste audits and analyzing the data, a number of graphs were created that display the proportions of each type of waste for each event day. Each graph reflects the cumulative weights of both audits for each day. Each graph is followed by waste inventory, a list of items found within each of the garbage bags.

Tuesday November 21 – Preview Gala

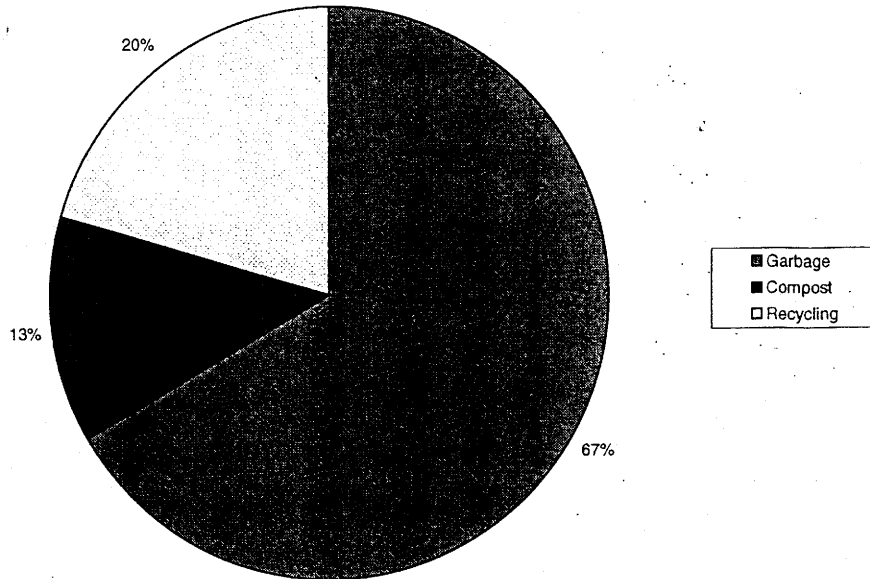


Figure 1. Cumulative weight of waste from 2 waste audits performed on November 21: Preview Gala.

Audit 1 - Floor (Decorating):

Garbage - ornament packaging (plastic boxes) wood and paint blocks

Recycling - coffee cups, water bottles, plastic bags

Compost - wooden sticks, orange and apple core

Audit 2 - Volunteer Area:

Garbage - milk packages, hamburger paper, fast-food rink cups

Recycling - soda cans, Gatorade bottles, Styrofoam coffee cups, tetra packs

Compost - coffee grinds, apple core, tea bag, tomatoes, orange, green peppers, napkins

*replace w
paper cups*

Wednesday, November 22 – Family Night

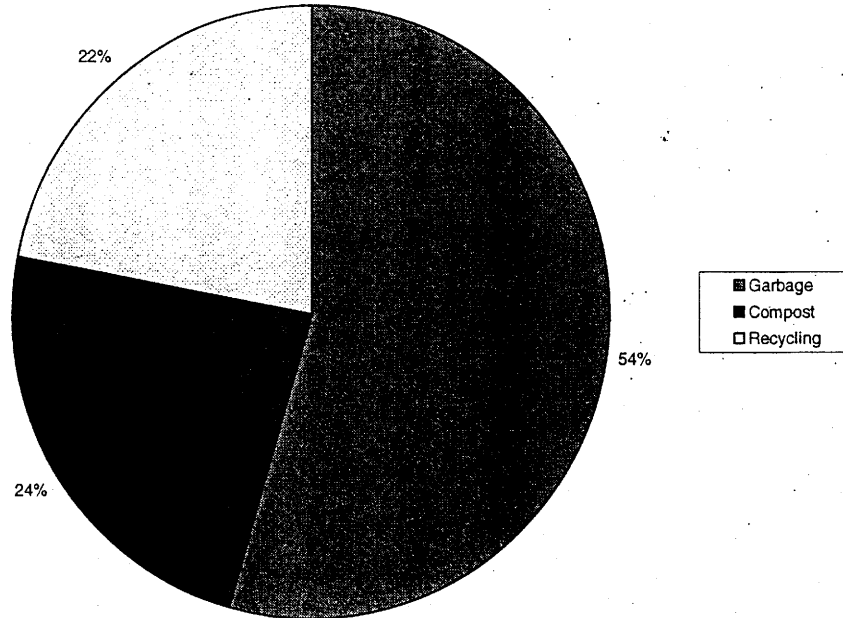


Figure 2. Cumulative weight of waste from 2 waste audits performed on November 22: Family Night.

Audit 1 – Floor (Unknown):

Recycling - numerous Styrofoam plates too dirty for recycling, other Styrofoam that was dirtied after it was in the garbage (contaminated), >30 cups that would have been recyclable if not placed in garbage

Compost - pizza, napkins, coffee grinds and filters

Audit 2 – Floor (Home Depot Workshop)

Garbage - flashlight with batteries, blocks of wood with nails

Recycling - enormous amount of birdhouse instructions from home depot, plastic from workshops of birdhouses

Compost - lots of discarded popcorn that is inseparable from garbage

Thursday November 23 – Heritage Breakfast and Fashion Show

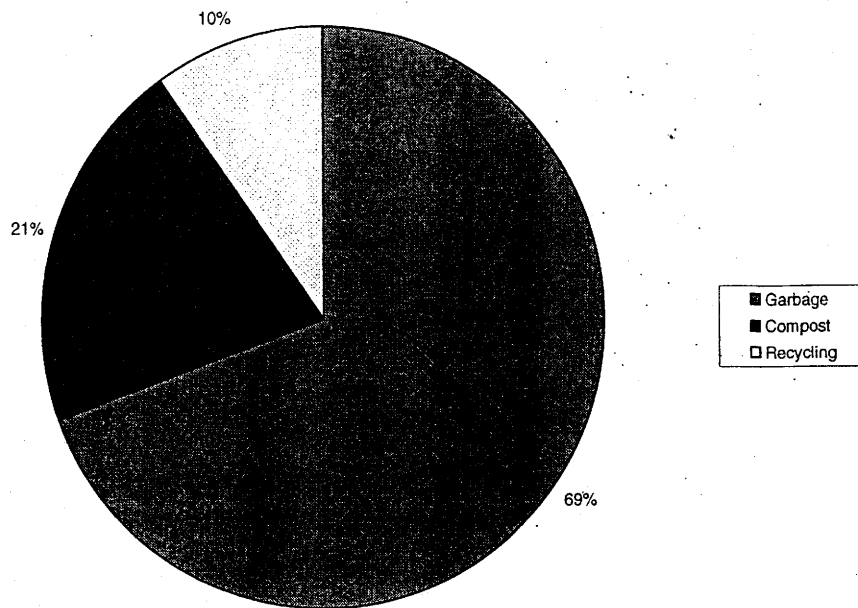


Figure 3. Cumulative weight of waste from 2 waste audits performed on November 23: Heritage Night and Fashion Show.

Audit 1 – Volunteer Area

Garbage - mostly recyclable materials that have been contaminated by being in the garbage

Compost - napkins

Audit 2 – Floor (Nutty Chocolatier)

Garbage - A lot of Dixie cups and Popsicle sticks

Compost - popcorn and cookies

Recycling - paper recycling bags and unused napkin

Friday November 24 – Celebrity Lunch

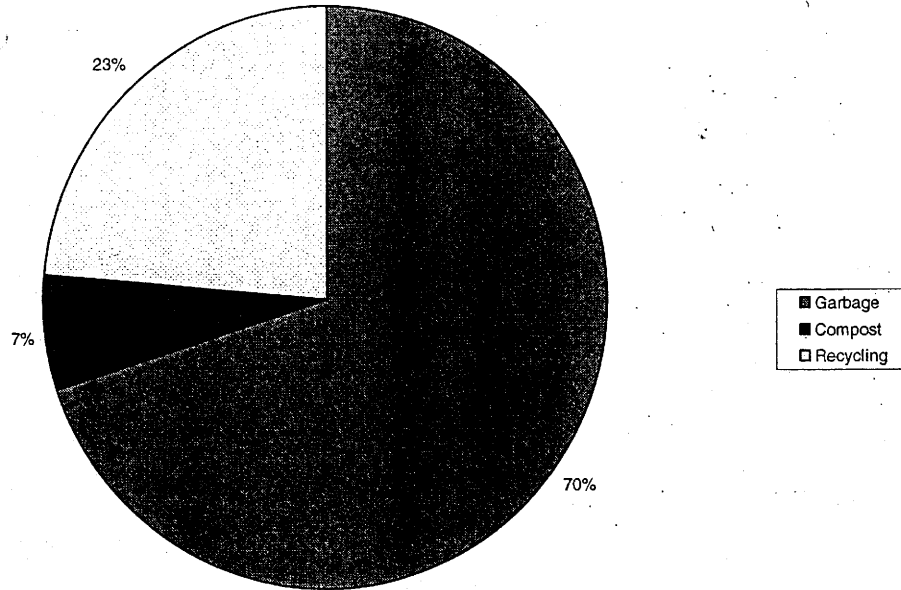


Figure 4. Cumulative weight of waste from 2 waste audits performed on November 23: Celebrity Lunch

Audit 1 – Floor (Front Entrance)

Compost - napkins

Recycling - bottles and foam cups

Garbage - first aid supplies, coffee cups and Gatorade cups

Audit 2 – Floor (Beside Stage)

Compost - ice cream and cookie

Recycling - bottles, foam cups and paper

Garbage - pens, wet paper and picture 6'9"

Saturday November 25 – Children’s Family Breakfast and Auction Night

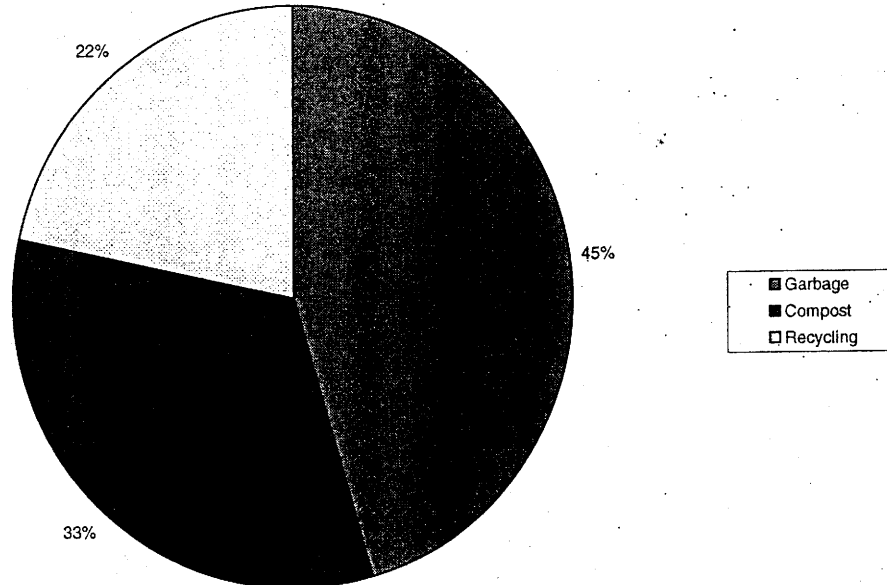


Figure 5. Cumulative weight of waste from 2 waste audits performed on November 25: Children’s Family Breakfast and Auction Night.

Audit 1 – Floor (Right Stage)

- Compost - napkins and muffin leftovers
- Recycling - coffee cup lids and juice boxes
- Garbage - plastic contaminated bags coffee cups

Audit 2 – Floor (Left Stage)

- Compost - raisins, napkins, mini bagels, orange peels, coffee filters, coffee grinds
- Recycling - tetra juice boxes, clean plastic bags, clean paper bags and cardboard boxes
- Garbage - plastic wrap, coffee cups, plastic bag, plastic packaging and dirty paper bags

Sunday November 26 – Festival Gospel Tidings

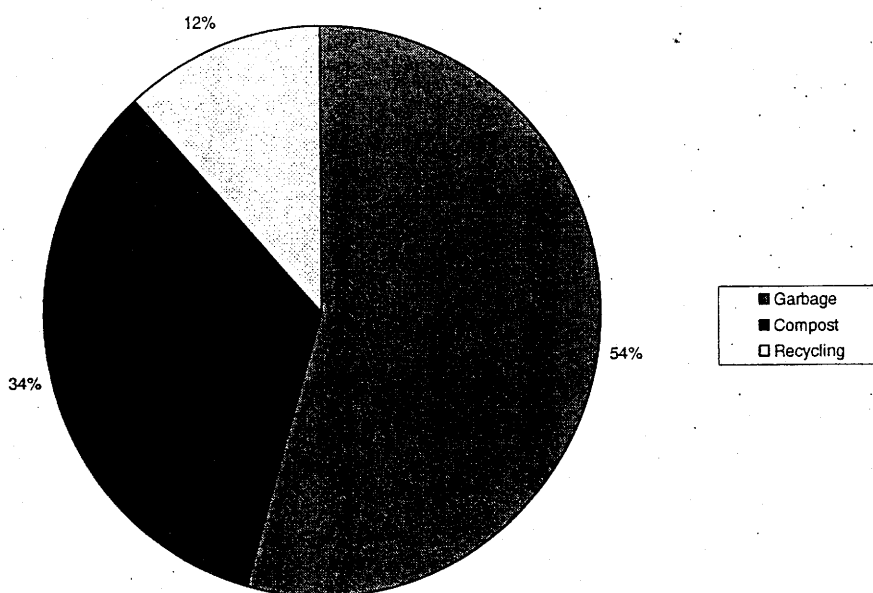


Figure 6. Cumulative weight of waste from 2 waste audits performed on November 26: Festival Gospel Tidings.

Audit 1 – Floor (Silver Bells Exit)

Compost - napkins, muffins and yogurt

Recycling - tetra juice boxes, coffee cup lids, milk cartons, Styrofoam plates (clean)

Garbage - coffee cups, Styrofoam plates (dirty), wooden skewers, yogurt cups

Audit 2 – Floor (Kid’s Area – Silver Bell’s Gift Shop)

Compost - napkins

Recycling - tetra juice boxes, coffee cup lids

Garbage - dirty Styrofoam plates, coffee cups, wooden skewers and yogurt containers

Upon visual inspection of the graphs, it is apparent that there is a great deal of variation in the relative proportions of each waste type among each day of the festival. On Tuesday, Thursday and Friday,

garbage occupied well over the majority of the bulk of the garbage samples, in terms of weight. Only on Saturday, during the Children’s Family Breakfast was there more combined compost and recycling than there was garbage in our samples. Figure 7, below, further depicts the variability in the percentage of waste constituents of the garbage’s that were sampled.

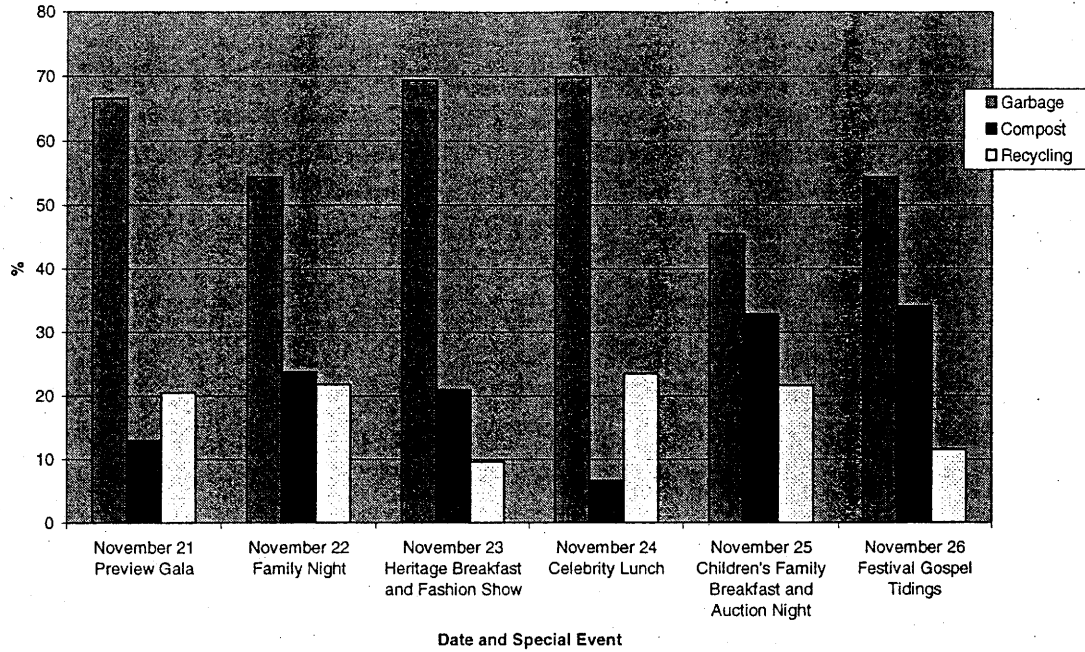


Figure 7. Percentage of each waste type extracted from 2 waste audits on each day of the festival.

Figure 8, as seen below, separates all samples taken from the floor, from all samples taken from the volunteer area. These formulated numbers are then compared with each other, as well as with the total numbers for all garbage samples taken throughout the event. The results show almost no difference right across the board between any of the three categories. This indicates that the volunteers are just as bad at recycling as the public.

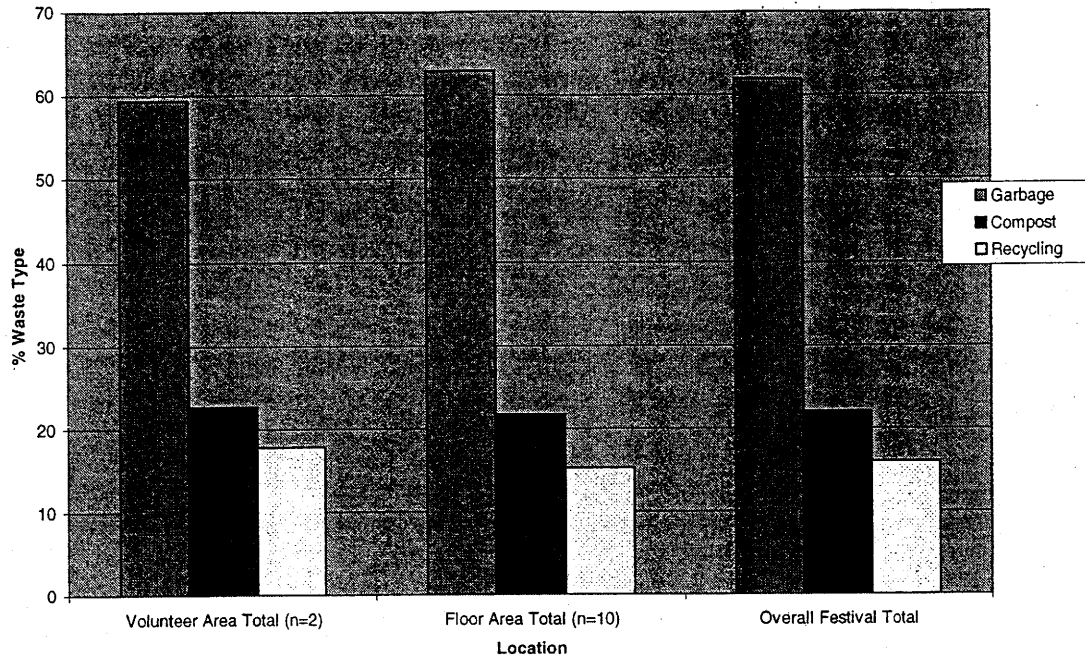


Figure 8. Cumulative percentage of waste types extracted from garbages in separate areas of the festival.

Challenges

The first step of any long term, multi-phase project is often the hardest, as it is often marred with unforeseen challenges which can only be avoided through experience. Our project was no exception. A lengthy list of problems existed that inhibited the efficiency of doing waste audits. Below is an explanation of each individual problem.

When performing a waste audit, it is important to know the source of the garbage, but despite our efforts, we could not find any janitorial staff. None of the volunteers were able to tell us who was picking up their garbage. This made it hard to determine the source of the garbage's we were taking from the dumpster.

Many of the recyclables in the garbage's were rendered un-recyclable because they were made too dirty due to contamination dirty garbage bag. Compostable items were made to weigh much more than they would have actually been, had they not been in the garbage, due to their saturation in liquid waste. This led to misleadingly larger number when weighing the compost.

The latter two problems both contribute to skewed results, as the waste audits are based entirely on the *weight* of the compost, recyclable, and garbage waste found in each garbage bag.

Waste audits in general measure and compare *weight*. But this isn't necessarily a good reflection of just how much waste is improperly discarded, as all the recyclables are relatively very light and the compost is relatively very heavy. The density of each waste type is consistently very different, so results can be misleading.

A lack of guidance and professionalism existed within the first year students who were doing related projects at the festival, and who were "supposed" to lend a hand to whomever was conducting the waste audits. Often, they would miss their scheduled shifts, which resulted in the waste audits being performed by only one person. When the first years did show up they didn't know what to do, thought that I was their supervisor, and came to me for instruction. There was a lack of supervision in this group that created an attitude of slacking, and some didn't even do the bare minimum. This led to our audit room being very congested and backed up with the recyclables that the first years were supposed to sort through. This made our job more difficult and certainly more frustrating.

Re

In order to make waste audits at the festival more efficient and valuable a number of improvements have to be implemented.

1. Communication between janitorial staff and project participants has to exist. Not just some, but absolute communication has to be established. Potential collaboration with custodians of the Memorial Centre would take this a step further, and facilitate the success of any project involving waste at the festival.
2. The problem of avoiding inaccurate audit results can only be stopped if people discard recycling in the recycling bins and compost in organic waste receptacles. The festival needs to have clearly labelled recycling bins. Most effective would be signs, not at floor level but above at eye level, drawing attention to them. Composting organic waste can only happen once the city of Peterborough gets involved, which they are currently in the process of doing. Perhaps by placing educated volunteer attendants at garbage and recycling bins these individuals could make sure that festivalgoers place their waste in the appropriate receptacle.

3. In taking a waste inventory, weight alone cannot be sufficient in comparing relative contributions by each waste type, and therefore methods of also accounting for the *volume* of each waste type occupies is necessary.

4. Most importantly, organization, leadership and guidance are essential in these projects. There must be approachable project representatives at the festival to supervise the younger students who come to the festival with no initiative and expect to have a list of tasks handed to them. Individuals who are designated and as acknowledge as the project leader must be present.

Compost Issues

Composting is a crucial part of keeping landfills clean as well as ensuring that organic material is properly treated. More and more cities are seeing the importance of making composting a citywide practice. A few years ago Toronto started a mandatory composting program with curbside pick up. Composting is growing in popularity and Peterborough is following Toronto's lead. The festival will soon follow the same trend.

Assessment

The following table shows the potential compostable material found in each audit

Table 1

Audit 1	Audit 2	Audit 3	Audit 4	Audit 5	Audit 6
Coffee grinds	Coffee grinds	Napkins	Ice-cream	Raisins	Napkins
Apple core	Apple core	Popcorn	Cookies	Napkins	Muffins
Tea bags	Tea bags	Cookies	Napkins	Mini bagels	Yogourt
Tomatoes	Tomatoes			Orange peels	
Oranges	Oranges			Coffee filters	
Green peppers	Green peppers			Coffee grinds	
Napkins	Napkins			Muffin	

This chart makes clear several repetitions of items that do not need to be found at all in the compost and that will be looked at in the packaging section. For the purpose of this project the compost's quantity and quality was measured in the waste audit. During each of the waste audits the quantity of compost removed was weighted and recorded. The make up of the compost is the information that has been put into chart form and will be used for further assessments of the festivals' practices. For instance providing the city with this information to add them in their ability to help the festival.

Challenges

Compost was being recorded through waste audits. Since waste audits are a mere sample of the garbage out put it makes it very difficult to get a true idea of how much compost there was going out. For certain

events, for instance the celebrity luncheons, food scraps from plates were scraped directly into one garbage, that garbage was all compost able but it was not audited.

Not every event was attending had the same observation level. There were events that I as the Compost specialist did not make it to that a similar situation to the luncheon could have occurred but that is not known information because of lack of manpower. When Compost was sorted out for waste audits it still had to be added back into the garbage after because of lack of composting facilities.

Garbage bags that were used for audits were not located in key food service areas. Most of the garbage's used were from entrances, or by the stage. Only two bags were taken from centre of floor and no pages were used from café. This creates a dilemma as the largest amounts of food waste being recorded.

Recommendations

Part A: It is obvious from the results from the waste audits (found in Appendix 1) that composting is necessary as well as a viable option for the festival. There are three major recommendations that are clearly indispensable.

1. Set up composting service for festival.
2. Have bins spread out on floor located next to garbage and recycling in key food serving areas.
3. Have volunteer in charge of gathering compost (can be same person that gathers recycling and garbage). As well as creating a chair position for Waste Management, as you learnt this year it is a large commitment and it has grown to a size that it should be one person's job to organize the pick up as well as the volunteers to work with the waste.

Part B: In order to make these more viable for the festival the following research into these solutions was done.

With reference to

1. The City of Peterborough has offered their services (taking into consideration the prompt start-up of there facilities city wide). They are for the fall of 2007 starting a citywide compost pickup. For further information into these please contact Virginia Swinton 742-7777 (extension: 1725).
2. The County has volunteered user-friendly containers to place on the floor for the duration of the festival. In order to gain access to said bins contact Shelly Stream at 743-0380 (extension: 312)
3. This should be a simple step of assigning volunteers to this area and providing lists of appropriate products for each specific area. It would seem like a time saving solution to create a chair position for 'Waste Management' during the festival.

Note: Sheri Arcaro – all ready has aided festival for a good number of years, she is the manager of the country-composting program. Ms. Arcaro can be contacted at 743-0380 (extension 317).

Composting is becoming a crucial part of our municipal practices; municipalities all over the country are taking up composting. The festival taking this on shows their responsibility to society and especially our community.

Food Section

Food Services within the Festival

While not outlined by the Peterborough Festival of Trees planning committee as a point of concern for this year's festival, my task during the festival was to examine the food services, practices and trends over the duration of the festival. As the focus of this year's festival is centred mainly on waste reduction and associated concepts, food services were not a primary concern for festival organizers as they will be tackling this issue in a greater context the following year. But for the purpose of this project and this course, the issues surrounding the food provided at the Festival of Trees will be the main focus for this section of the following section.

Background-Sysco Corporation

For this year's festival, as with previous festivals, all food served to the public was supplied by Sysco Canada. This company is a division of the larger company, Sysco Corporation. Formed in 1970 and based out of Houston, Texas, the Sysco (which stands for Systems and Services Company) has grown from a \$115 million/year company in 1970, to a \$30.3 billion/year company in 2005.¹ This statistic alone should demonstrate the all-encompassing nature of Sysco's hold on the food industry within North America. Sysco, according to it's website is "...the leading supplier of 'meals-prepared-away-from-home' operations in North America...the industry it serves has expanded from a \$35 billion industry to more the \$200 billion."² Sysco Corporations now has close to 500 distribution locations across the majority of North America (with the exception of Mexico). Peterborough itself is home to one of several distribution centres in southern Ontario, the others being located in Toronto, Mississauga and Kingston. The company supplies food services to a variety of restaurants, public facilities, sports and entertainment venues, public schools and universities throughout the country. In terms of Peterborough's Festival of Trees, all food provided by Sysco is donated to the festival, unless otherwise noted. Even in the case of most restaurants that take part in the events, Sysco provides their food. The case of the Festival of Trees is unique, as all food provided by Sysco Canada is donated, free of charge to the festival, allowing the Festival to receive maximum revenue and at the same time not incur any expenses while providing food for large amounts of people. This will perhaps be the largest challenge faced by the Festival's organizers, in attempting to make a break from Sysco, a company that provides free food to an event.

¹ "The Sysco Story," *Sysco Corporation*, 25 Nov 2006, <http://www.sysco.com/aboutus/aboutus_story.html>.

² "The Sysco Story"

Background-General Food Observations

The general observations from this year's Festival of Trees are as follows: food safety and security has not been an issue in previous years at the Festival. From general observations, almost all, if not all food served at the Festival of Trees was non-local, processed food that was as mentioned before, supplied by Sysco Canada. Food supply goes beyond publicly consumed food, as a large portion of food provision was directed towards the volunteers at the Festival. With the exception of one, all meals served to volunteers during the set-up and over the operation of the festival we're catered by non-local "fast food" chains. Starbucks provided coffee, tea and hot chocolate throughout the festival, and while the coffee was listed as organic, it is neither provided by a local company nor is it "fair trade" product.

Lunches and dinners for volunteers consisted primarily of pizza, sandwiches and hamburgers/french fries provided by businesses such as Little Ceaser's, McDonald's, Burger King and Subway. Breakfasts consisted generally over pre-packaged bagels, muffins and cookies. The only alternative meal provided for volunteers while working at the festival (that I am aware of) was the final night of the festival, with the meal being sponsored by Red Lobster. The meal provided consisted of a chili freshly prepared by the Red Lobster chefs, as an alternative to what would be seen as standard Red Lobster food (meaning some form of pre-fabricated Red Lobster meal). Another main point of interest at the Festival is food supplied to children during events. The Children's Fantasy Breakfast, held on Saturday November 25 provided children specifically with a breakfast and accompanying activities geared towards the Christmas theme.

Selection of Food Served at the Festival- Examples

Monday November 20, 2006-Volunteer Lunch

Pizza- Pepperoni, Vegetarian (green peppers, mushrooms, tomatoes), Hawaiian (pineapple, ham and bacon) and Plain Cheese. *Provided by Little Ceaser's Pizza in Peterborough.*

Drinks- Pop (Coca-Cola products) and water (bottled). *Provided through Sysco Canada.*

Friday November 24, 2006- Celebrity Lunch

Drinks- Coffee and Tea (Starbucks, served in mugs)

Main Food items- bread and butter, filo pastry stuffed with a mushroom cranberry and goat cheese pate, cucumber wrapped around salad greens with sprouts. Main dish: Chicken with turnips, apples and squash.

Dessert-Raspberry cake (pre-packaged). *Provided through Sysco Canada.*

Saturday November 25, 2006- Children's Fantasy Breakfast

Bagged lunch provided to children attending the breakfast. Cost- \$10 per person (including parents).

X Bagged lunch containing- Mini Bagel, one slice of processed cheese, one box of individually packed raisins, one tangerine, individual sized yogurt, one individual sized juice box/w straw. *Provided through Sysco Canada.*

Menu- Permanent Dining Area

Drinks- Coffee (Starbucks, one size), Hot Chocolate (Starbucks, one size), Hot cider (one size), pop (cans and bottles), water (bottled).

Food- hot dogs, bowl of soup (single serving), bowl of chili (single serving), pizza (slice; provided by Pizza Pizza). *All food, unless otherwise noted, provided by Sysco Canada.*

**Although covered in our food packaging section of the report, it is important to note once again that all food served was heavily packaged (in some cases packaging inside of packaging), and in most cases the packaging was neither recyclable nor compostable.*

Suggestions for Improvement

Perhaps the easiest statement to make regarding changes in the Festival of Trees food system is that, everything must change. And by saying everything, this in specific means that where food is provided for the Festival is the primary element that needs to change in the future. Food for the Festival is based solely on one dominant concept: that in order to for food to be served efficiently it must come from a source that can produce this food as easily and as affordable as possible. This has what, in the last 40 years or so has become known as "fast food", and without a doubt one of the most dominant social trends in the world.³ And along with the shift to fast food has come a monopolization of conventional farming and transformed into a food production industry. Sysco itself, while not being credited with pioneering this trend, has certainly become one of the most efficient participants in it. Sysco at present time supplies over 420,000 customers across North America with various food products, with these customers including 3,000 Wendy's restaurant chains and the Hilton chain of hotels.⁴ Sysco has effectively created a monopoly of the food industry, controlling the flow of food product through a great deal of communities and regions.

³Ester Reiter, *Making Fast Food*, (Kingston: McGill-Queens University P, 1991) 47.

⁴Emily Lambert, "Fast Food," *Forbes*. 12 January 2004: 166.

The largest problem with relying on Sysco Corporation as a food supplier is that there is no promotion of community involvement. The Festival of Trees promotes itself as a reliable supporter of the greater Peterborough community, promoting and raising money for accessible health care for all. But in contrast to this strong community involvement the entire festival relies on, it supplies its food through a large national food services conglomerate. The most important of these reasons is that with local food consumption, people are able to know where their food has come from, how it was made and are at the same time supporting their own local food industry.⁵ Local food sourcing will also promote a better understanding of where food comes from and what goes into producing it. Currently, there is a large disconnect between people who consume food at the festival, and where this food is coming from.

Recommendations

1. Source your food locally- this means providing food that has been grown in the Peterborough region, if not then at the very least within the province.
2. Serve fresh food- do not focus on pre-packed food for events, they are usually heavily processed and do not hold much nutritional value. Serving freshly prepared food rather than bagged lunches or pre-fabricated (not prepared on site) meals is an important step to make.
3. Educate people on what they are eating. Even if that last two recommendations are ignored, it is important to let people know what they are eating, noting where it came from and how it was made. This includes not only food for festival patrons, but for volunteers as well.

In conclusion, with regards to the Festival of Trees' food sourcing and provision, the most obvious conclusion is that Sysco Canada and similar food service industries (fast food chains) is no longer a viable option for food sourcing. It is agreeable that this is no doubt a contentious issue, as all food provided by Sysco is given on donation, making it extremely hard to say no to. But if a festival is to promote itself as a community leader, it must embrace all aspects of the community including local food producers.

⁵Charles L. Harper and Bryan F. Le Beau, *Food, Society and Environment*, (New Jersey, Prentice Hall, 2003) et al.

Packaging

General Background on Packaging

Packaging is used to keep foods freshness, for look, for excessive travel, for individually wrapped items and to keep goods from damaging. Packaging is ultimately used to protect, contain preserve and communicate⁶. In the modern world, packaging makes up a considerable portion of our landfills. In the Ontario government's plan to reduce waste by 60 percent it identified reduction in packaging material as a major priority. The report explained that packaging is a large component of every waste stream in the waste system. The report revealed "packaging makes up about 25% by weight of the residential waste stream and makes up a considerably higher percentage by volume"⁷. This report is a over a decade after the voluntary agreement was signed in 1990 between government and industry. The National Task Force on Packaging aim was to limit packaging by 50 percent in Canada before 2000; it was achieved well ahead of the deadline⁸. Industry donates money each year to the Ontario's blue box program to offset the amount of recyclable packaging materials that go through the blue box program annually. The key is reduction first and recycling second. Packaging is an important part of the strategy to diver waste in Ontario and should be for the Festival of Trees as well.

Challenges

The festival was a busy time for everyone involved in the following section an outline of the challenges that were faced when attempting to conduct a detailed review of the problem of packaging at the Festival of Trees. The Festival of Trees was full of different groups of volunteers everyday. A new chef and different kitchen staff were from restaurants across the city each day. This posed numerous problems for the packaging section of the report. The reason why it was such a large problem was because everyday food was being prepare and no one really knew what type of packaging it was coming in. Where the waste was being placed. Another question that was unable to be answered during the festival was if the food was being prepared 100 percent onsite. If the food was being prepared at another location then that packaging and waste was not seen or accounted for. The waste was a product of the festival even if it was not prepared onsite. This question ever got answered in the packaging section of the report. It remained a challenge even when talking to the chefs that prepared the food, as they were busy or about to leave.

⁶ ReducePackaging.com

⁷ Government of Ontario

⁸ CCME

When individuals were able to answer some brief questions about the food and where it was coming from, another challenge was to identify what packaging was previously used in. It left identifying problem issues very difficult, as there was little knowledge of where the packaging originated. I dealt with these problems by attempting to find individuals from the board whom were at the festival. A few times they were able to direct me to the kitchen staff that were preparing and unwrapping the food. Again they were difficult to find and were not interested in speaking with me because like the chefs they were either busy or ready to leave.

Daily changes of volunteers also left the packaging scattered around the heating facilities at the Memorial Centre. It was nearly impossible to find out who's responsibility or performed the task of clean up from the different events. The volunteers disposed of the waste, and it is not known where they were disposing it and if the recyclable items were being recycled. Everyday someone new was volunteering and there was a lack of knowledge beyond the immediate task at hand.

A challenge at the festival that was not the fault of the festival itself was the Memorial Centre staff themselves. The staffs were rarely available and provided not help in answering easy questions about the where the waste was going and where they collect it. The Memorial centre Staff were not helpful and the problem persisted throughout the festival, although it was a larger concern for the waste section of the study.

The Volunteer area was a bit confusing initially. The food that was going through the volunteer area was completely different than that of the rest of the festival. Eventually I had to ask the volunteers what they had or were going to have for food for the day.

Issues

A persistent problem material that is seen in waste daily comes from the coffee industry. Ready to go cups that are disposable and convenient. Tim Horton's and Starbucks the two major coffee conglomerates in Canada do not have recyclable cups with the exception of the lids. Coffee cups made up a considerable amount of garbage in the waste audits completed at the festival. There were two different cups present at the Festival one was for the festivalgoers and another was for the volunteers. The festivalgoers cups were from the Starbucks company while the volunteer cups were no name Styrofoam recyclable cups. A related problem to coffee was the creamers, milk and sugars that are used in the coffee. The issue with the creamers, milk and sugar packages is that each packages was individually packaged and one portion. This created a lot of unnecessary waste during the entire festival in both the volunteer area and the main festival area.

Another problem are plastic water bottles although they are recyclable many individuals do not dispose of their bottles properly. The necessity of water bottles in the volunteer area on top of water cooler seemed to be an extra waste.

For the sit down celebrity lunch and Thursday morning breakfast, disposable napkins were at each table. For the Pre- Galla and other events, napkins were used instead of small plates. Napkins are a form of waste that is so common in our everyday lives that the majority of individuals pay little attention to. Napkins are a paper product like so many paper products that are easy and disposable; however every time you use a disposable paper product you are placing a burden on our environment far greater than the burden on landfills. Paper products place a burden on our forests and our rivers. Logging destroys complex forest ecosystems and reduces them to monoculture crops. The production of paper products through pulp and paper mills pollutes our drinking water. That is why it is important to eliminate wastes such as napkins even if they are a common occurrence in our disposable society.

A lot of the food coming from the kitchen was individually packaged. Food packaging is a major source of waste in Ontario and was evaluated to be numerous at the festival as well. The volunteer area's food was even worse. The volunteers received take out food like McDonalds and pizza. The food was coming from the fast food industry for the most part. The food itself is unhealthy but it take out foods create a lot of waste. For the hot beverages in the volunteer area were given different products than those for the festivalgoers. The hot chocolate, coffee and teas were individually packaged

The children's area used arts and crafts to create birdhouses. The birdhouses were individually packaged in plastic and had instruction booklet for each birdhouse. A lot of arts and crafts supplies are individually packaged for the purposes already mentioned such as protection and communication. In the following section the recommendations to solve all of these issues will be listed.

Recommendations

1- Coffee Cups

Volunteer Area:

- A) There is dishwashing facilities available in the Memorial Centre the best way to reduce the Styrofoam cups would be to have ceramic mugs available for volunteers taking a break.
- B) Remind and encourage volunteers to bring their own travel mugs
- C) Sell volunteer travel mugs for coffee that are special to the Festival of Trees

Festival:

- A) Encourage or Ask Starbucks if they have recyclable disposable cups in their product line, that they may be willing to donate.
- B) Sell Festival of Trees travel mugs with a certificate for a free coffee
- C) Have a lower price for customers who bring in their travel mugs and have proper signage for this special deal on coffee.

2- Water

Volunteer Area:

- A) Have either the water bottles or the water coolers with cups
- B) Keep the water coolers and encourage individuals to bring in their own water bottles from home, many volunteers already did that.

Festival:

- A) Have clearly labelled recycling bins and put a sign on the stand where they purchase the product as a reminder to recycle
- B) Sell Festival of Trees reusable water bottles instead of selling bottled water

3-Napkins

- A) Use cloth napkins for sit down meals, they are easy to wash and add some decorativeness to the table.

Napkins ii

- A) Purchase brown napkins that are not bleached and can be composted
- B) If plates are available use small plates
- C) Have members purchase festival of trees plates as a souvenir or include them in the price of the event.

4- Kitchen

- A) Try and get bulk items
- B) Try not to have pre packaged already made food as it contains more packaging
- C) When keeping dishes hot in the oven, use reusable products not disposable aluminium foil
- D) Make sure that proper recycling and cleaning if the recycling is occurring in the kitchen

5- Children's Activities

- A) Ask volunteers and kids to place their recyclable materials left over from the birdhouse in the recycling rather than the garbage where they were found. Informing children of the values of recycling

family night?

B) Make up a clean up song for the children to sign when they are finished to remember to recycle, make recycling fun for the kids

6- Coffee creamers' and sugars

A) Have bulk milk, cream and sugars with small reusable containers available to volunteers and customers

B) Place the recyclable plastics in the recycling at the end of the meal, make surer that dish staff have access to recycling bins that are as convenient as the garbage bins

7- Volunteer meals and beverages

A) Try and purchase bulk items from the fast food stores that have recyclable materials.

B) Use non-disposable plates, forks and knives with the meal.

C) Have coffee and hot chocolate in bulk rather than individually packaged amounts

These recommendations give the festival an assorted of possible solutions, some being better than others and some being more realistic than others. They provide the festival of trees with some options in order to eliminate the specific packaging waste that was observed during the 6 days of the festival

Conclusion

The recommendations provided to the Festival of Trees board offer a wide variety of possible solutions for their overall environmental problems. Some of the recommendations are single problems and they are easy solutions that can work within the current structure of the Festival of Trees. Other solutions offer the festival a greater challenge. Some larger problems are difficult to conquer, as many of the problems in food and packaging are a direct result of the pre-packaged food that is donated from sponsors. This poses a challenge to find new donations, as one cannot be picky with donations. The festival may want to re evaluate whom they accept donations from and where other sources of food donations could come from within the Peterborough community. The Festival of Trees is benefiting the local health care system, but it does not benefit the entire community. The food at the festival does not benefit the festival-goers health or educate them. The waste at the festival adds to the current waste problem and does not stand as an example great waste diversion. The festival fails to look holistically at the benefits of the festival to their community. The Festival is a venue where individuals can raise money for health in our community and it bring our community together. The Festival should use its position in the community to benefit more aspects of the community than health. This can be achieved by reducing waste, educating members on recycling and providing educational material on social and environmental issues at the Festival of Trees.

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