Waste Reduction in the Depot

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Problem Statement

There is too much waste coming from the Depot.

Background:

It has long been known that using plastic for disposable products is not good for the environment in numerous ways. First, the creation of plastic products is an extremely energy intensive process. Second, plastic does not degrade when it is disposed of. Plastic products will sit in landfills for thousands of years, never decomposing, causing problems for future generations who may want to clean up landfills. Toxic nature of plastics?

Here at Humboldt State, the food suppliers on campus are part of a larger organization called the University Center. The Depot, the "J", the South Campus Market, and the Giant's Cupboard are all part of the University Center. All of the money that is generated by each dining area is collected by University Center where it goes to pay the bills for all four of the dining areas. Because the University Center is a non-profit organization, it is not allowed to make any money. If any of the dining areas makes a profit one month, it is used to make up for another dining area that may have fallen short of even. However, to keep prices down for customers, a fee on students has been implemented for the University Center. The fee helps the University Center pay the bills for the dining areas without increasing prices on products sold.

Humboldt State University is known, internationally, as a model for conservation and sustainability. Currently, the Depot, a major food supplier on campus, uses disposable containers for their drinks and food. Paper products are used for food and coffee, while pre-packaged drinks come in either glass or plastic containers. Although the glass and plastics are recyclable, and recycling bins are located throughout the Depot and campus, a good portion of the containers are still ending up in the trash. The combination of large amounts of disposable products being used and recycled materials being trashed, has created a concern among customers about how to reduce the waste. The management at the Depot has shown interest in reducing the amount of disposable waste, but has found no reasonable alternatives. Is the recycling of plastics cost-effective?

Customers who go to the Depot can find a variety of drinks that they can fill their own reusable cups with, if they have them. However, more often than not, Depot customers are purchasing pre-packaged drinks or disposable paper cups for coffee instead of using their own cups. For instance, the Depot has claimed that it goes through about 8,000 one-liter bottles of Aquafina water per week. The main concern voiced by customers is the use of disposable coffee cups and plastic cups used for smoothies. The Depot goes through hundreds of paper and plastic cups per day. Reducing the amount used per day could be as simple as remembering to bring your own cup.

Finding an alternative to disposable, non-recyclable products could also alleviate the concern over the amount of waste. Such programs have been a success at other schools like the University of Massachusetts and Penn State. At UMass, eating

establishments such as Earthfoods Café, customers are able to purchase all of their foods in compostable containers, eat with compostable utensils, and without separating their waste, they can throw their trash in a compostable trash bag. This system makes it easy on the customers as well as the employees. They mad their decision for socially conscience reasons, the same reason that are driving HSU to find alternatives to disposable, non-recyclable products. Penn State has made an even larger commitment to their program. "About five tons of food wastes from the seven different dining commons, The Nittany Lion Inn, The Penn Stater Conference Center Hotel, and Penn State's Cedar Child Care Center are collected each week," writes Rebecca Zeiber, they then compost on site and use it for landscaping across campus. Their composting program has been so successful that they are planning on creating a larger site on another part of campus and using it for educational purposes. Professors will be able to bring their classes there to experience science first hand. Community members too, are expected to benefit by having the establishment open to the public. This way, anyone who wants to learn will have the opportunity, not just registered students.

Goals and Objectives

Goal:

To reduce the amount of disposable, non-recyclable products used in the Depot.

Objectives:

- Increase the amount of recycled products used by 3% by December 2006.
- Decrease the amount of recyclable products found in the trash by 100% by December 2006.
- Decrease the amount of paper products used by 7.5% by December 2006.
- Decrease the amount of glass products used by 3% by December 2006.
- Decrease the amount of plastic products used by 7.5% by December 2006.

Reducing Waste Alternatives

Reasonable alternatives for reducing the amount of waste being produced by the depot should reflect certain criteria, including the cost of implementation, the amount of raw materials used, the amount of resources the Depot must use, how much time the alternative would take for full implementation, and how practical it would be for the Depot to actually use the alternative. Based upon these few criteria as well as other considerations, the alternatives have been narrowed down to five alternatives that would help the Depot in some way to reduce the amount of disposable, non-recyclable products that it uses. These include buying compostable materials, an educational program for customers, installing a dishwasher and buying reusable dishes, purchasing more fountain drinks, or cutting the operation hours.

Alternative Descriptions

Composting:

This waste reduction alternative calls for the Depot to use compostable disposables instead of the paper cups, bowls, and plastic cutlery that are currently being used. For this alternative there are many components that need to be considered. First would be to consult with Humboldt State's on site composting facility to see if the facility has the capacity and resources to compost these additional items. Next would be to research and create a cost-benefit analysis sheet, which compares prices of different companies who provide such products. Through out this whole process it would be important to communicate and exchange ideas with Depot management to ensure maximum cooperation on behalf of both parties. The next important step would be to present research to Depot management. If management does indeed consider purchasing compostable disposables, the next step would be to educate students and staff on this new procedure. Separate compost bins will need to be set up along with posters indicating what the bins are for. Last step to ensure this alternative will be effective is monitoring. It would also be important to document any improvements or changes that need to be made in order to make the operation run more smoothly.

Switching to compostable products would boost the public's view of the Depot and prevent worries of where the waste is ending up. Humboldt State already has a composting site; therefore, if the Depot's compost was sent there, it could be reused. However, if for some reason, the compost generated by the Depot was still sent to landfills, there would be no worries over the waste sitting in the landfills forever because the compost is biodegradable. Also, the University Center would save money by sending the waste to the composting site here on campus, rather than a landfill. According to a study done the Massachusetts Institute of Technology disposing of compostable trash is less expensive than disposing of regular trash. The composting alternative is an expensive one when compared to the other alternatives. The Depot would be paying more for their products every month, however this could be offset either by increasing prices directly to the students, or by increasing the fees that go to the University Center from student's tuition.

- How much does this offset increased costs?

Educational Program Alternative:

Education the public involves several aspects of interaction with the people you are trying to communicate with. These include indirect education, including putting up posters, flyers, and getting the depot to promote the waste reduction program by reminding people to recycle when they buy their food and having reusable cups for sale wherever drinks are sold. Direct interaction would include having a table at the quad where students could ask questions and get immediate answers, and hold special lectures or videos about other schools with no waste or waste reduction programs at events like orientations.

The education alternative would be low cost to the Depot. Posters and flyers could be made at the school and volunteers or workers could post them. It does not cost any money to remind students as they make their purchases that there are recycling bins located next to trash bins. If cups are sold wherever drinks are sold, an actual profit could be made. During orientation week, freshmen could be gathered to explain, before entering school, that our goal is to reduce the waste leaving this campus. Many people entering into college have not been exposed to the ideas behind waste reduction, even if they know about recycling. If they are properly educated from the beginning, then they are more likely to become inspired when combined with their excitement for joining their new school.

The only resource use involved in this alternative is the paper that is used for posters and flyers, and whatever raw materials are used for reusable cups that may be sold. Implementation time is also very fast. If this alternative is chosen, it can be implemented immediately. No new employees would need to be hired and member of CCAT or the Campus Recycling Program staff could do education at orientation. Flyers could be displayed with minimum space needed, and volunteers could hang them. Posters and promotional material could also be put of in the Depot, this could easily be accomplished by current employees during the slower hours of the day. It is an easy, cheap, and somewhat effective alternative. This only disadvantage to this alternative is the lack of reliability. Educating people means relying on those people to take the initiative to bring their own reusable mugs or to throw plastic and glass bottles in the right bins. It would require a collective effort on all customers, and just a few people that may not care could mean that goals are not met.

Reusable Dishes and Dishwasher:

One way the Depot could reduce the amount of waste it produces would be to buy reusable dishes for customers to use. Instead of using paper bowls for salads, paper cups for coffee, and plastic cups for smoothies, customers could use dishes that can be returned and washed for reuse by other customers. This alternative would require that the Depot purchase reusable dishes, designated spaces for collecting, washing and storing the dishes, and may require the purchase of a new dishwashing machine specifically for the

reusable dishes as well as new employees to wash the dishes. Purchasing a new dishwasher would require the Depot to designate a space for its installment. Once the initial investment is made, there would be no further need for money except for the occasional replacement of broken or stolen dishes. However, this alternative does not meet the demand for disposable products so customers may order their food and take it with them.

Fountain Drink Alternative:

Utilizing fountain drinks in order to reduce the amount of disposed-of glass bottles and cans is one potential means of achieving our goal. Fountain dinks are generally less expensive than bottled drinks due to the reduced packaging. Also, since drinks come as syrup or a concentrate the vendor supplies the water, which is another reason for a reduced price. The use of fountain drinks would require less man power as well since the drinks would not have to be stocked as often. In order to implement this idea, fountain drink dispensers would need to be purchased and there would need to be a place to put them.

Due to the fact that the Depot is currently utilizing all of the existing space available, something would need to be displaced to make room for the new dispensers. Since the idea is to encourage people to buy fountain drinks instead of bottled drinks or cans, then it would seem reasonable to replace one of the refrigeration units, which currently holds the bottled drinks. These refrigerators are not very energy efficient compared to a fountain drink, which does not cool the drink, but instead offers ice for customers. Unfortunately, these refrigerator units represent an investment and would be put out of commission in such an event. The refrigerator units could possibly be sold, but likely at a loss. Another shortcoming of this alternative is the fact that the most popular drink companies such as Sobe and Arizona do not offer fountain drink syrups.

Since the main idea is to reduce waste, then the fountain drink alternative's effectiveness would be highly reliant on students binging their own containers. The reduction in the amount of paper cups sold would be minimal if students failed to bring their own containers. Disposable containers would have to be provided for maximum sales to occur, further reducing the impact to paper cup reduction. Currently there are already incentives in place for students to bring their own mugs including one-dollar coffees when you bring your own cup and being able to fill up with filtered water rather than paying for bottled water. The success of implementing fountain drinks would only be possible in tandem with a strong educational component.

Cutting Operation Hours:

By reducing the amount of hours that the Depot operates, the amount of waste produced could be reduced because there would be fewer customers being served. This alternative could also result in fewer employees and create a loss in profits.

Preferred Alternative:

The preferred alternative is combining both the composting and educational alternatives. This combination would capture the customers who remember to bring their own reusable containers, those who forget their containers, those who do not wish to use their own, and tries to prevent recyclables from ending up in the trash. The two alternatives would meet every objective if implemented correctly.

The fountain drink alternative could require too much space for the drink dispensers, and there are few beverage retailers that offer fountain drinks for their various beverages.

If setting up the Depot with reusable dishes requires installing a new dishwasher, this could create a problem as space in the Depot and its kitchen is already limited. Using reusable dishes does not allow customers to take their purchases with them.

Cutting the operation hours of the Depot may reduce waste, however, it could result in a decreased profit, which is not a reasonable trade-off for the management.

WEIGHTED CRITERIA MATRIX

Based on a ten-point scale, the weighted criteria matrix shows the scale of importance for each criterion by ranking them from most important to least important, five (5) being the highest and one (1) being the lowest. Each alternative is then rated upon how well they meet each criterion. Alternatives are ranked on a ten-point scale on how well they meet the criteria.

Objectives	Alternatives									
	Composting		Education		Reusable Dishes		Fountain Drinks		Cut Operation Hours	
Cost (5pts)	6	30	1	45	4	20	8	40	1	5
Raw Materials Used (environmental factors) (2pts)	7	14	4	8	7	14	5	10	2	4
Resources Used (4pts):										
Employees (1pt)	9	9	8	8	5	5	10	10	10	10
Space (3pts)	6	18	10	30	4	12	2	6	10	30
Implementation Time (1pt)	6	6	9	9	4	4	4	4	10	10
Total	77		100		55		70		59	

Cost Comparison: Chosing Between Product Companies

The cost analysis lists the prices for various products from 3 competing companies and from Sysco. The prices are given based on bulk, then are broken down to show the price per unit. The cheapest prices for compostable products are highlighted in yellow.

	Green Home	Amount per Unit	Bio Corps	Amount per Unit	Recyclaholics	Amount per Unit	Sysco	Amount per Unit
Forks	$35.00/1000	$0.035	$15.50/240	$0.065	42.00/1000	$0.042	11.26/1000	$0.011
Spoons	$35.00/1000	$0.035	$15.50/240	$0.065	42.00/1000	$0.042	10.99/1000	$0.011
Knives	$35.00/1000	$0.035	$15.50/240	$0.065	42.00/1000	$0.042	10.34/1000	$0.010
Bowls - 12oz.	$52.00/1000	$0.052	N/A	N/A	105.00/1500	$0.070	101.13/1000	$0.101
Plates - 9"	$95.00/1000	$0.095	$24.00/100	$0.240	104.00/1000	$0.104	41.36/500	$0.082
Coffee Cups								
12 oz.	$80.00/1000	$0.080	N/A	N/A			65.75/1000	$0.066
16 oz.	$86.00/1000	$0.086	N/A	N/A			87.98/1000	$0.088
20 oz.	$95.00/1000	$0.095	N/A	N/A			99.76/1000	$0.100
Coffee Cup Lids	$43.00/1000	$0.043	N/A	N/A	N/A	N/A	59.99/1000	$0.060
Hot Cup Sleeves	$68.00/1500	$0.045	N/A	N/A	130.00/2000	$0.065		
Plastic Cups								
12 oz.	$130.00/1000(14 oz)	$0.130	$26.00/100 (10oz)	$0.260	150.00/1000(14 oz)	$0.150	55.07/500	$0.110
20 oz.	$130.00/1000	$0.130	$26.00/50 (16oz)	$0.520	180.00/1000	$0.180	71.44/500	$0.142
Plastic Cup Lids	$45.00/1000	$0.045	N/A	N/A	60.00/1000	$0.060	62.60/1000	$0.063
Napkins	$51.00/6000	$0.009	N/A	N/A	66.00/12/500	$0.011	51.14/12/418	$0.010
Straws	$30.00/1000	$0.030	$24.00/1000	$0.240	200.00/10,000	$0.020	13.75/1000	$0.014
Soup Cup - 14oz	$40.00/600	$0.067	N/A	N/A	96.00/600	$0.160	5.43/50(12 oz)	$0.109
Soup Cup Lid	$18.00/600	$0.030	N/A	N/A	lids included above	0.16 for cup lid & cup	18.37/100(12 oz)	$0.184

Cost Analysis

Compares the prices for Sysco and Greenhome on an individual unit scale and a total price for the number of cases purchased. Results from this chart and the chart on the next page show that the Depot spent $2,286.88 on products that could potentially be compostable. When purchased from Greenhome, the exact same number of each product totaled up would cost the Depot $2,662.00, for a total difference of $335.12.

Itemized list of potentiall compostable products the Depot bought for the month of September. The number of cases bought, the total number of units per case, the price per case, total price for all cases bought, and the price per individual unit is given.

Product	Cases	Total # of Units	Price per Case	Total Price	Sysco Price per Unit
Cup Plastic Clear Soft 12-14oz. Pet 10/50ct.	3	1500	$55.07	$165.21	$0.110
Cup Plastic Clear Soft 20oz. Pet 10/50ct.	3	1500	$71.44	$214.32	$0.143
Cup Paper Hot Ambiance 12 oz. 20/50ct.	5	5000	$63.01	$315.05	$0.063
Cup Paper Hot Ambiance 16 oz. 20/50ct.	4	4000	$87.98	$351.92	$0.088
Cup Paper Hot Ambiance 20 oz. 20/50ct.	2	2000	$96.07	$192.14	$0.096
Fork Plastic Med Wt. Wht 1000/ea.	4	4000	$11.26	$45.04	$0.011
Knife Plastic Med Wt. Wht 1000/ea.	4	4000	$10.34	$41.36	$0.010
Spoon Plastic Med Wt. Wht 1000/ea.	3	3000	$10.99	$32.97	$0.011
Lid Plastic Dome 12/16/20oz. 8/125ct.	8	8000	$53.90	$431.20	$0.054
Bowl Paper Hvy 12 oz. 4/250ct.	2	2000	$101.13	$202.26	$0.101
Plate paper Pulp 8.75in. 4/125ct.	6	3000	$41.36	$248.16	$0.083
Straw Plas Wrpd Jumbo 7.75" 4/500ct.	3	6000	$15.75	$47.25	$0.008
Total				$2,286.88	$0.778

Cost Analysis (cont'd)

Information from Greenhome to compare prices with Sysco. The number of units available per case, the number of cases that would need to be bought to equal the number actuall bought by the Depot, the Total price of those cases, the price per unit, and the difference in cost for both individual units and the difference for all cases bought are listed.

Product	Greenhome Units/Case	Cases to equal # bought	Greenhome Price/Case	Total Price to equal # bought	Greenhome Price Per Unit	Cost Difference per case	Cost Difference per Unit
Cup Plastic Clear Soft 12-14oz. Pet 10/50ct.	1000	1.5	$130.00	$195.00	$0.130	$29.79	$0.020
Cup Plastic Clear Soft 20oz. Pet 10/50ct.	1000	1.5	$130.00	$195.00	$0.130	-$19.32	-$0.013
Cup Paper Hot Ambiance 12 oz. 20/50ct.	1000	5	$80.00	$400.00	$0.080	$84.95	$0.017
Cup Paper Hot Ambiance 16 oz. 20/50ct.	1000	4	$86.00	$344.00	$0.086	-$7.92	-$0.002
Cup Paper Hot Ambiance 20 oz. 20/50ct.	1000	2	$95.00	$190.00	$0.095	-$2.14	-$0.001
Fork Plastic Med Wht. Wht 1000/ea.	1000	4	$35.00	$140.00	$0.035	$94.96	$0.024
Knife Plastic Med Wht. Wht 1000/ea.	1000	4	$35.00	$140.00	$0.035	$98.64	$0.025
Spoon Plastic Med Wht. Wht 1000/ea.	1000	3	$35.00	$105.00	$0.035	$72.03	$0.024
Lid Plastic Dome 12/16/20oz. 8/125ct.	1000	8	$43.00	$344.00	$0.043	-$87.20	-$0.011
Bowl Paper Hvy 12 oz. 4/250ct.	1000	2	$52.00	$104.00	$0.052	-$98.26	-$0.049
Plate paper Pulp 8.75in. 4/125ct.	1000	3	$95.00	$285.00	$0.095	$36.84	$0.012
Straw Plas Wrpd Jumbo 7.75" 4/500ct.	1000	6	$30.00	$180.00	$0.030	$132.75	$0.022
Total				$2,622.00	$0.846	$335.12	$0.068

Composting Costs

Implementation Cost:

An itemized list of all purchases the Depot made for the month of September was used to find compostable substitutes and their cost. Unfortunately, substitutes and prices could not be found for all items and thus were omitted from the report. Using prices from the least expensive compostable product company, Greenhome, the difference in prices, including shipping costs, would cost the Depot an estimated $300 per month. When the prices are broken down to the cost per item, each item was calculated to cost anywhere from less than one cent to about four cents. Some items were found to be cheaper than products from Sysco. After having contacted Greenhome, it was found that Greenhome has the capability to ship products to the Depot 3 times per week, to ensure product availability for customers. It is also possible that the Depot could secure a discount with Greenhome, thus reducing the cost of implementation.

Disposal Cost:

If there were no separation of compostables from the regular trash, the Depot would continue to use its current disposal system, sending the compost to landfills along with regular trash. The cost to the Depot would only include the amount to substitute the current products with compostable products. Although this is not the most economical option, the Depot would be supporting environmentally friendly products and would have the option to separate in the future.

Including separation would require the Depot to modify its disposal system so that compostable products and food wastes are collected separately from regular trash. According to a feasibility study by the Engineering 435 course, the diversion of compost from the shared dumpster used by University Center would result in approximately 2.2 cubic yards of compost, potentially including 357 lbs of food waste produced by customers per week and the products that will be substituted with compostable products. The Depot composts its pre-consumer food waste, but with the compost implementation, customers would have the chance to compost, drastically reducing the amount of trash hauled off. Currently, the roll-off dumpster has a capacity of 14 cubic yards and is emptied bi-weekly. This implies that the dumpster, emptied by frequency not capacity, is being under filled. Taking this into consideration, and adding the 2.2 cubic yards of compost that would be diverted with separation, it is possible that the dumpster could be downsized to a 10 cubic yard capacity, thus reducing the amount of disposal for the University Center.

cost savings of ?

Education Costs

The Education alternative relies on informative flyers, posters, and employee word-of-mouth. As a result, there are no immediate costs to the Depot or University Center.

Implementation Strategies

The following are strategies for which to get HSU students and the Depot to reduce the amount of waste that is being generated at the Depot.

Educational Strategies:

1) Beginning August 22, 2005, the employees and management advertise that the Depot has free filtered water and coffee for only $1.00 for those who bring their own container. Employees should verbally tell customers about the benefits of bringing they're own containers.

2) By August 22, 2005, have leak-proof mugs to sell at the Depot for those people who do not have their own containers. Possibly offer the first cup of coffee free for those who purchase the mugs.

3) It is a known fact that many items that can be recycled are getting thrown into the trash. By January 17, 2005, display eye-catching signs over each recycle bin and signs over trashcans that would encourage students to think twice about what they are throwing away.

Another way to get the depot to reduce their waste is to persuade them to use compostable ware. This goal comes with a whole separate set of implementation strategies as follows.

Compostable Strategies:

1) By December 8, 2004, provide a cost benefit analysis for the Depot management that shows the prices of compostable product producers and how they compare with the current prices of Sysco.

2) If indeed Depot management decides to convert to compostable ware, a proper grand opening will need to be planned by August 1, 2005 for a "Compostable Grand Opening" on September 5, 2005. This will entail much advertising around campus and in the Lumberjack, advertising should begin immediately at the beginning of the school year on August 22, 2005.

3) Prior to grand opening on September 5, 2005, composting bins will need to be obtained for the Depot along with new composting materials that will be put on display to prepare students for what is to come. A display of new materials should be created by August 22, 2005 for the start of the school year. Materials for the actual "opening" should be obtained by September 1, 2005.

4) On "Compost Grand Opening" day, Monday, September 5, 2005 all volunteers standing at composting areas showing and encouraging people to compost their items and thanking them for doing so.

Monitoring and Evaluation

Monitoring how much waste is leaving the Depot now and in the past has been done by waste audits. We can use previous audits to find out how much waste is disposed of by the Depot now and use future waste audits to determine how well the program is working. The waste audits would evaluate three different parts of the project:

- Determine if less total waste is leaving the Depot in order to evaluate the effectiveness of the entire project.
- Determine, of the total waste, how much is being composted and how much compostable and recyclable material is being thrown away in regular trash containers. This will evaluate the educational component.
- Determine how much compost is leaving the Depot to evaluate the composting component.

Waste audits would also be able to determine if we have reached our objectives within the anticipated time period. These objectives include:

- Decrease the amount of paper products by 7.5% by December 2006.
- Decrease the amount of glass products by 3% by December 2006.
- Decrease the amount of plastic products by 7.5% by December 2006.

Depot management would monitor how much plastic, paper, and glass products they buy. If they are buying less of these products after implementation then it will be assumed that the program is successful. By measuring the amount of products bought after implementation, an exact figure can be derived for evaluating the effectiveness of such a program. This is another way to determine if the objectives have been met.

The Depot management would create an evaluation for the Campus Recycling Program (CRP) to see how they think it is working and how it can be improved upon. They would be asked if they think that the composting is reducing the trash leaving the campus and entering landfills, and the employees of the CRP would be asked how they feel about the Depot's attempts at reducing waste in this way.

Main Points

- Although Green Home has been found to be the cheapest company to purchase compostable materials from, it has been calculated, based on the purchases for the month of September 2005, that Green Home will still be, on average, $300 more than Sysco, the current product provider.

- This difference of $300 is spread over various products and can easily be absorbed by increasing the prices of each product no more than 3 cents.

- A price increase may not be received invitingly; however customers are likely to be willing to pay a little extra knowing that their purchases are environmentally friendly.

- The public opinion of the Depot may become more positive in the eyes of the community and the students knowing that it is doing its part to work towards sustainability.

- The Depot may even appeal to more customers because of its efforts.

- There is adequate space, as of now, for compostable waste from the Depot in the HSU compostable site.

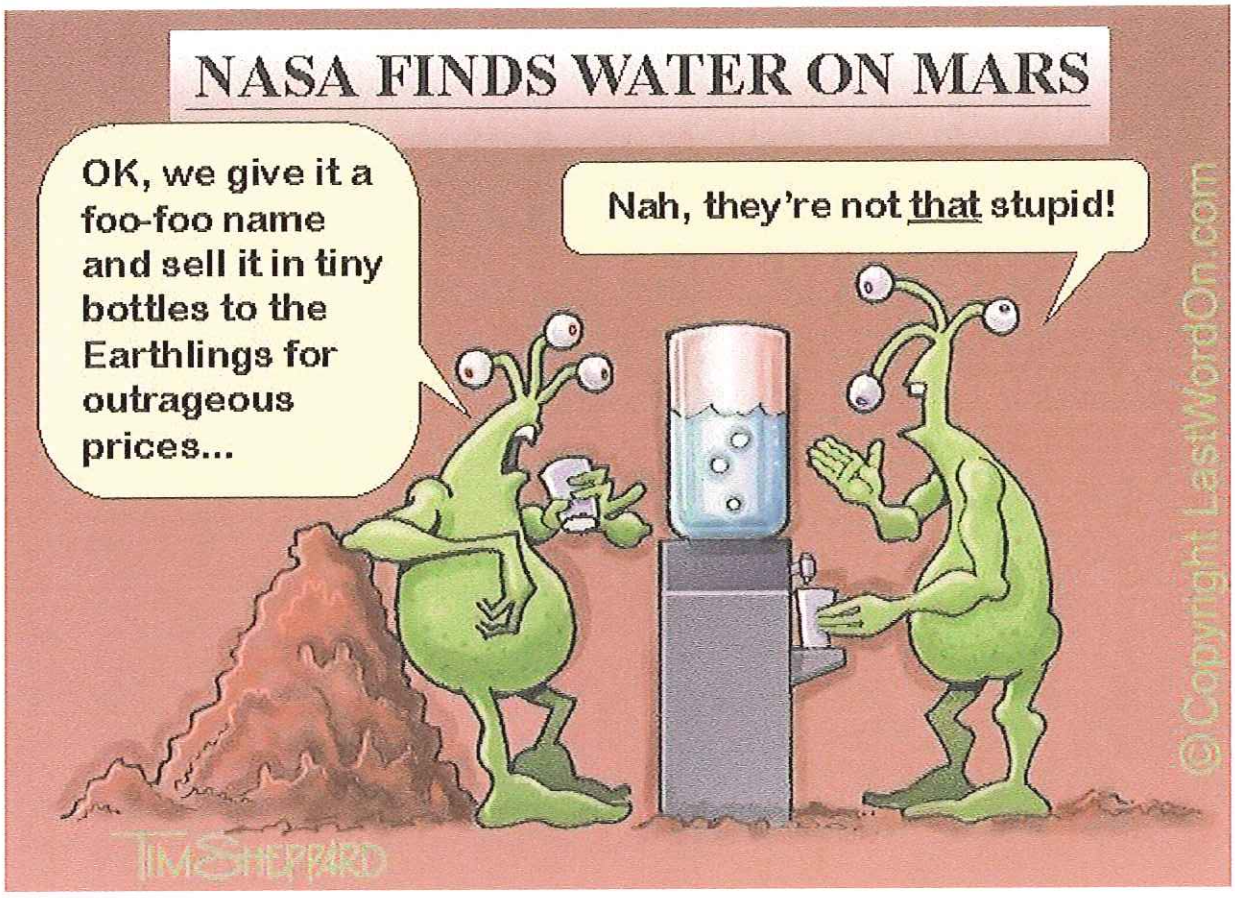
- However, with more areas on campus beginning to compost, HSU may not have enough space in the composting site.

- Although our goal is to reduce the waste from the Depot, even if the compost that is created instead of trash was still sent to landfills, it will eventually decompose over some period of time, unlike plastic, which will never decompose.

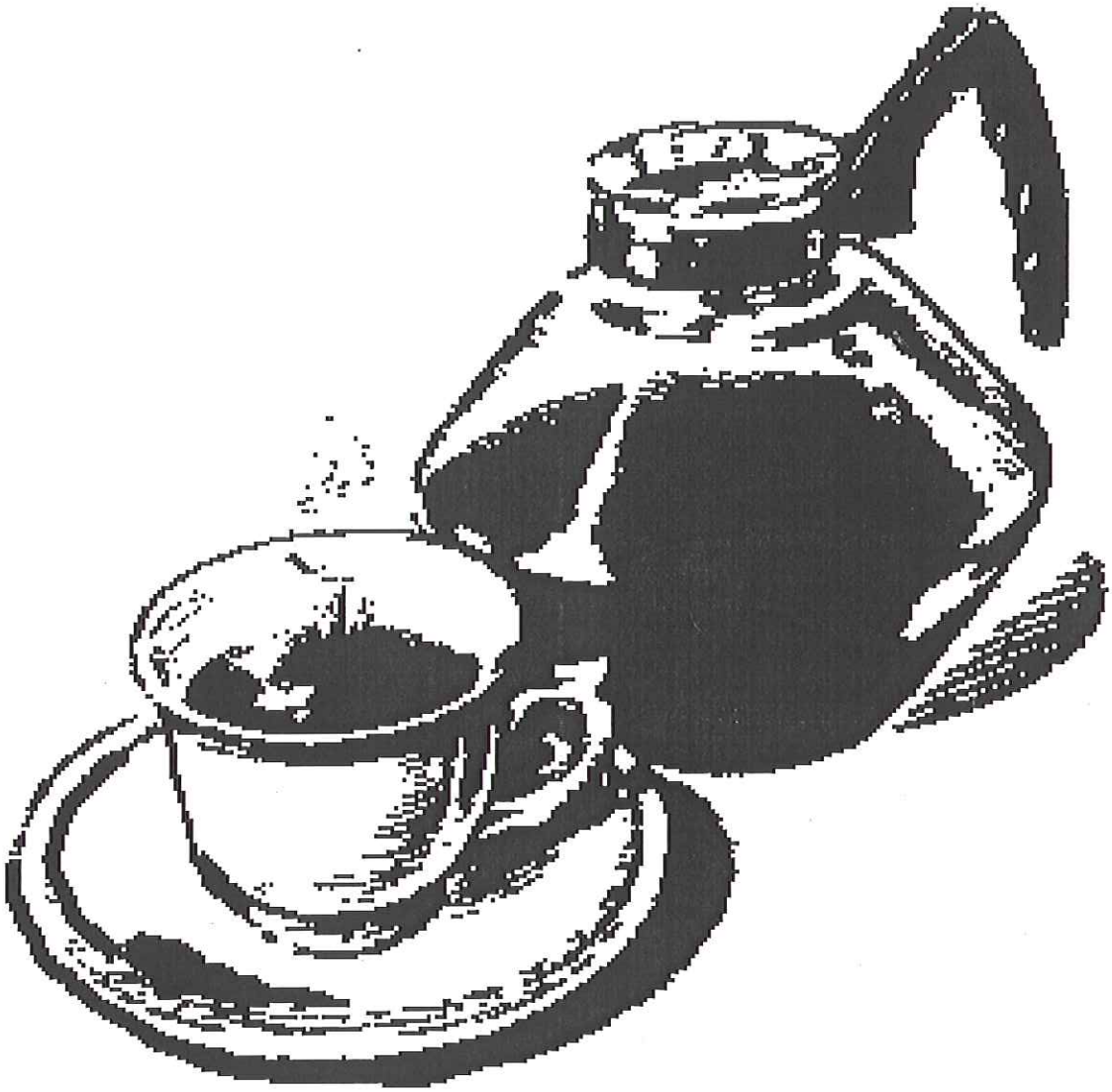
- In conclusion, although compostable materials are a little more expensive, the money can still be made up elsewhere, and the Depot will generate a more positive image for itself as well as Humboldt State. Last, no matter where the compost created ends up, it is still better for the environment than plastic.

Index:

WATER

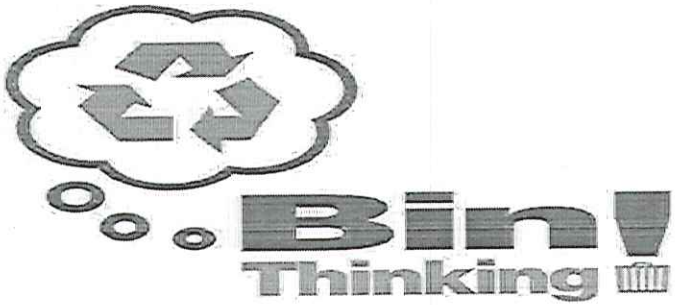


IT'S FREE WHEN YOU BRING YOUR OWN CONTAINER!!!



COFFEE IS ONLY A
DOLLAR WHEN YOU
BRING YOUR OWN MUG!!!

Think before you toss.



Cans and Bottles
don't belong in the trash.

Please do not put your bottles and cans in the trash!

It just ain't cool.

Composting Program Benefits, Beautifies Penn State

Penn State's composting program allows trash and food scracps from the dining halls and events to be reused in campus landscaping instead of being sent to a landfill.

Imagine a future in which all waste products can be reused in some way. This technology will go far beyond recycling a Pepsi can. A half-eaten sloppy joe, the plate it came on, greasy used napkins, and even utensils could wind up in another product instead of going into the landfill. This technology might be taught to people of all ages, so even a two-year-old would know to put her waste into a compost bin instead of a garbage can.

The future is here.

Composting—using microorganisms to break down wastes—is a hot concept. It also is becoming an integral part of the Penn State scenery. Since the University's composting program began in 1997, wastes from multiple sources on the University Park campus have been diverted from landfills and used on campus landscaping. About five tons of food wastes from the seven dining commons, The Nittany Lion Inn, The Penn Stater Conference Center Hotel, and Penn State's Cedar Child Care Center are collected each week. At a nearby composting site, the wastes are combined with manure from dairy research herds and leaves from campus. The wastes are then thoroughly mixed to incorporate oxygen into the piles. Within a few months, the wastes are broken down into compost.

During the 1998–99 academic year, 1,164 tons of waste were collected, generating 740 tons of finished compost, which was applied to campus landscaping and flower beds. The benefits extend beyond aesthetics. "A great feature of this project is its relation to the University's teaching, research, and extension mission," says agricultural engineer Bob Graves. "Not only are we diverting wastes from the landfill and reusing them, we are teaching composting techniques to others."

Glen Cauffman, head of farm operations, served as a mentor for the Governor's School for the Agricultural Sciences, where students got hands-on experience with composting technologies. "The students worked on composting research projects and developed methods of monitoring processes," he says. "One student used electronic monitoring methods and another conducted a chemical analysis of the ingredients. Through these experiments, students were able to learn about the science and benefits of composting."

Even at a young age, children can learn to conserve and reuse resources. Younger children at the Cedar Child Care Center are taught to separate their food scraps from their plasticware. Jillian Stevenson, head of the College of Agricultural Sciences Alumni Society, has a young child who attends the center. She believes children who are exposed to composting at a young age will grow up to be more environmentally conscious. "I'm really glad children are getting into this composting program," she says. "In the future we will be appalled at the thought of throwing away a

plastic spoon. I think it will become second nature to reuse our resources."

The project creates educational opportunities for adults, too. Waste from tailgates and luncheons sponsored by the college's alumni society also end up at the compost site instead of a landfill. Penn State's catering service has worked to create a fully compostable meal for such occasions. Last year's two "zero-waste" tailgates tried to use only compostable items, including plates and utensils. With the help of Biocorp, an international company that sells biodegradable and compostable products, all the waste went into one bin and was taken to the compost site. No separation was required, which made it even easier to participate. The college's graduation luncheon also features a compostable meal. "The alumni society has received postive responses regarding the composting efforts, and the parents and students really like the idea of composting the wastes," Stevenson notes.

Positive feedback has generated talk of increasing the waste collection. However, the current composting site, located on a tree-enclosed meadow behind campus, is too small to allow expansion, Graves says. This has kept the project operating on a pilot scale.

A site west of The Penn Stater Conference Center Hotel is being considered for a new composting site. The new site would allow education and science to converge with the addition of a facilities building. The composting will take place behind the building, where a huge wall of windows will allow educators to describe the process as the audience watches.

"Professors can bring their students out to the new building site to learn how we handle the waste," says Al Matyasovsky, head of recycling at the Office of Physical Plant. "Governor's School students, educators from Shaver's Creek Environmental Education Center, and other interested community members can come to learn about composting and cutting-edge technologies for waste utilization. We intend to have lecturers speak to groups in the building. Overall, it will be a dynamic education and research center for the community and the state."

—Rebecca Zeiber

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UMASS NEWS RELEASE
University of Massachusetts Amherst

Release: Immediate
Contact: Patrick J. Callahan

April 10, 2003
MAIN PAGE | MONTH-IN-REVIEW

UMass Student Businesses Crunch More Than Granola

Social concerns are important, but crunching the numbers matters, too

AMHERST, Mass. - At the Earthfoods Café, a student-run business at the University of Massachusetts Amherst, customers can purchase a variety of vegetarian dishes, and then eat them with compostable utensils and plates. The café is one of eight student-run businesses at the University that all make enough money to cover their costs. At the same time, operating the businesses provides students with valuable hands-on experience far beyond what they learn in the classroom

The choice of the compostable utensils and plates at Earthfoods was made for socially conscious reasons, Christina Calvaneso, a senior who serves as a consultant to the café is quick to point out. "They cost seven cents per utensil," Calvaneso says. "But we decided to spend the money so that they go right in with the compost." Soon, she says, if a supplier can be found that is closer, the cost per unit will go down. She says her experience with the student-run businesses has helped her land a job with a major corporation when she graduates.

The not-for-profit businesses employ 130 students and are run by cooperative principles of participatory management. They use consensus and are governed both by the rules of private enterprise and a sense of social consciousness. Day-to-day decisions fall to a network of committees. Policy manuals developed over the past three decades by previous groups of students guide each business.

Services offered by the businesses include the People's Market, a whole foods grocery store, a bicycle co-op and TIX Unlimited, a ticket outlet for student events. In addition to the café, there's also Campus Design and Copy, a student-run copy shop, and three snack shops located in residence halls open evenings.

All the businesses are overseen by the Center for Student Business, an agency of the Campus Activities Office, part of the division of Student Affairs. The enterprises receive advice from consultants - 10 undergraduates who have experience at the businesses, and one graduate student. The center was chosen as one of 10 exemplary programs by the National Association of Student Personnel Administrators in 2001.

Christopher Olson, an MBA student who also serves as a consultant, says he's often called on to provide financial advice to make sure each business is properly keeping its statements, and doing so in a timely manner. He also trains the student consultants and is a member of the center's management team.

Over at the People's Market, David Lambert says he and others who run the business also have a social consciousness when purchasing their products. "We support local businesses and buy organic foods from other cooperatives. All our coffees are fair-trade coffees," he says.

Consultant Christina Gandolfo says purchasing committees makes such decisions, and while deciding by committee is sometimes cumbersome, it's the system

that has been used for decades. A key talent, however, for all of the businesses, is to constantly train new workers and managers because students cycle through every four years or so. "We always need to mold new leadership," she says.

Lambert, of the People's Market, says managing by consensus is one of the ways the businesses make decisions, and sometimes it gets in the way because they rely too heavily on it. He also says consultants such as Gandolfo and Calvaneso are quick to point out that long meetings and inability to reach decisions cost the enterprise, because each member is getting paid for meeting time.

In fiscal 2002, the eight businesses generated total revenue of $738,602, and had a payroll of $241,870, with 142 jobs. The Earthfoods restaurant had 30 working members and generated $157,216, while the 28 members at the People's Market generated $268,503 last year. Donna Vanasse, the office manager at the Center for Student Business, says it's important to emphasize that seven of the eight businesses are not subsidized, and are self-sustaining concerns. Tix Unlimited and the Center for Student Business receive funding from the Student Activities Trust Fund, she says.

For information on the Center for Student Business, call 413/545-2167

or visit http://www.umass.edu/rso/csb/

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FAQs

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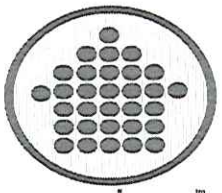
Plastics & Life Cycle Analysis

PLASTICS AND LIFE CYCLE ANALYSIS

Q: How many gallons of crude oil are needed for one pound of plastic?

A: There are some really interesting facts that a European study generated re and petroleum usage: 3.7 billion pounds of plastics were used in Western Eurc automobile production. It took 7.2 billion pounds of oil to make the plastic. It that 26 billion pounds of oil are saved each year through fuel efficiencies from plastic components - leading to a subsequent reduction in CO2 emissions of 6(per year! The bottom line: Almost 4 times as much oil is saved each year thar produce the plastics in the first place! And the energy value of plastics can stil end of the auto's useful life.



green home food service price list

Product	Case Price	
Hot cups, unbleached 8oz-1,000/case	$ 70.00	
Hot cups, unbleached 10oz-1,000/case	$ 75.00	
Hot cups, unbleached 12oz-1,000/case	$ 80.00	
Hot cups, unbleached 16oz-1,000/case	$ 86.00	
Hot cups, unbleached 20oz-1,000/case	$ 95.00	
Hot cups, eco-film 16oz-1,000/case	$ 81.00	*Made with PLA lining instead of polyethelene
Hot cups, eco-film 24oz-1,000/case	$ 85.00	currently backordered until late 11/2004
Bagasse tree free 4oz hot cups-1,000/case	$ 25.00	*Bagasse is made from sugar cane pulp,
Bagasse tree free 5oz hot cups-1,000/case	$ 30.00	
Bagasse tree free 8 oz hot cups-1,000/case	$ 50.00	
Bagasse tree free 12oz hot cups-1,000/case	$ 62.00	
Unbleached Coffee cup sleeves, fits 10, 12, 16, & 20oz cups-1,500/case	$ 68.00	
Wooden Coffee Stirrers, 5-1/2"-10 packs of 1,000	$ 10.00	
Wooden Coffee Stirrers, 7-1/2"-10 packs of 500	$ 20.00	
Coffee cup lids, 8 oz dome (in white, brown, or black)-1,000/case	$ 37.00	*Made from recycled content plastic
Coffee cup lids, 10 oz dome (in white, brown, or black)-1,000/case	$ 45.00	
Coffee cup lids, fits 12, 16 or 20 oz dome (in white, brown, or black)-1,000/case	$ 45.00	
Cold cups, PLA 3oz compostable-2,000/case	$ 100.00	
Cold cups, PLA 8oz compostable-1,000/case	$ 130.00	*PLA is corn starch based
Cold cups, PLA 10oz compostable-1,000/case	$ 130.00	

Cold cups, PLA 12 oz compostable-1,000/case	$ 130.00	
Cold cups. PLA 14 oz compostable-1,000/case	$ 130.00	
Cold cups, PLA 16oz compostable-1,000/case	$ 130.00	
Cold cups, PLA 18oz compostable-1,000/case	$ 130.00	
Cold cups, PLA 20 oz compostable-1,000/case	$ 130.00	
Cold cup flat lids, fits 3oz compostable-2,000/case	$ 30.00	
Cold cup flat lids, fits 8, 10 and 12oz cups compostable-1,000/case	$ 38.50	
Cold cup flat lids, fits 14, 16, 18 and 20oz cups compostable-1,000/case	$ 40.00	
Cold cup curved lids, fits 14, 16, 18 and 20 oz compostable-1,000/case	$ 45.00	
PLA straws, 6.25" long -1,000/case	$ 30.00	
PLA straws, 6.25" long -25,000/case	$ 325.00	
PLA straws, 8" thick slurpee style, long -10,000/case	$ 75.00	
Bagasse tree-free plates 6 inch round-1,000/case	$ 30.00	*Bagasse is made from sugar cane pulp
Bagasse tree-free plates 7 inch round-1,000/case	$ 45.00	
Bagasse tree-free plates 9 inch round-1,000/case	$ 65.00	
Bagasse tree-free plates 9 inch oval-1,000/case	$ 60.00	
Bagasee tree-free plate 10 inch-800/case	$ 64.00	
Bagasse tree-free plates 10 inch-3 compartment 700/case	$ 63.00	
Bagasse tree-free bowls, 6 oz-1,000/case	$ 35.00	
Bagasse tree-free bowls, 11 oz-1,000/case	$ 50.00	
Bagasse tree-free soup bowl 14 oz with lid-600 sets/case	$ 54.00	
Bagasse tree-free soup bowl 17 oz with lid-600 sets/case	$ 60.00	
PLA compostable forks-1,000/case	$ 35.00	
PLA compostable knives-1,000/case	$ 35.00	*PLA is corn starch based
PLA compostable spoons-1,000/case	$ 35.00	
Wheat compostable forks heat resistant-1,000/case	$ 89.00	*Wheat cutlery is certified non-GMO
Wheat compostable spoon heat resistant-1,000/case	$ 89.00	
Wheat compostable knives heat resistant-1,000/case	$ 89.00	
Wheat compostable sporks heat resistant-1,000/case	$ 89.00	
Limestone heat resistant compostable forks-2,000/case	$ 200.00	
Limestone heat resistant compostable spoons-2,000/case	$ 200.00	

Limestone heat resistant compostable knives-2,000/case	$	200.00	
Bio-Pak to-go container #1, 5"x4.5"x2.5-450/case	$	61.00	
Bio-Pak to-go container #3, 8.5"x6.25"x2.5"-200/case	$	52.50	
Bio-Pak to-go container #4, 8.5"x6.25"x3.5-160/case	$	52.00	
Recycled dispenser napkins, 7x13.5" unfolded- 10,000/case (625/sleeve)	$	45.00	
Recycled brown napkins, 7x7"-6,000/case	$	54.00	
Cellulose sandwich bags, 6.5"x10", 3 boxes of 100	$	24.50	
Cellulose freezer bags, 10"x15", 3 boxes of 50	$	24.50	
Certified Compostable Trash Bags, 33" x 36"- 32 gal -1 ml, 100/case	$	49.00	*Eco-polyester resin
Certified Compostable Trash Bags, 33" x 36"- 32 gal -1.5 ml, 100/case	$	70.00	
Certified Compostable Trash Bags, 33" x 48"- 32 gal -.8 ml, 100/case	$	53.00	
Certified Compostable Trash Bags, 46" x 60"- 32 gal -.8 ml, 100/case	$	83.00	
Biodegradable bags, 20 Gal, .88 ml thick, 24Wx32L-200/case	$	82.50	*Matter-bi (potato starch)
Biodegradable bags, 20 Gal, 1.4 ml thicks,24Wx32L-200/case	$	103.50	
Biodegradable bags, 30 Gal, .88 ml thick, 30Wx32L-250/case	$	124.50	
Biodegradable bags, 33 Gal, .88 ml thick, 33Wx39L-200/case	$	133.50	
Biodegradable bags, 33 Gal, 1.4 ml thick, 33Wx39L-200/case	$	180.00	
Biodegradable bags, 39 Gal, 1.4 ml thick, 33Wx44L-100/case	$	94.50	
Biodegradable bags, 45 Gal, .88 ml thick 40Wx46L-100/case	$	118.50	
Biodegradable bags, 55 Gal, .88 ml thick, 38Wx 58L-100/case	$	108.00	
Biodegradable bags, 65 Gal, .88 ml thick,42Wx 64L-100/case	$	129.00	

Current Product Purchase for September

No.	Product	Cases	Unit price	Total Price
1	Container paper #3 nat, 1/200 ct. Fold Pak	2	$38.90	$77.80
2	Paper French Fry cup 16oz. 20/50 ct.	3	$158.78	$476.34
3	Cup Plastic Clear Tall 8 oz. Rigid 20/25 ct.	3	$35.26	$105.78
4	Cup Plastic Clear Soft 12-14oz. Pet 10/50 ct.	3	$55.07	$165.21
5	Cup Plastic Clear Soft 20oz. Pet 10/50 ct.	3	$71.44	$214.32
6	Cup Plastic Portion Trans. 2oz. 10/250 ct.	13	$4.44	$57.72
7	Cup Paper Hot Ambiance 12 oz. 20/50 ct.	5	$63.01	$315.05
8	Cup Paper Hot Ambiance 16 oz. 20/50 ct.	4	$87.98	$351.92
9	Cup Paper Hot Ambiance 20 oz. 20/50 ct.	2	$96.07	$192.14
10	Sleeve paper Hoit Citavo Kraft 1200/12-2oz.	4	$42.86	$171.44
11	Cutlery Wht Forks Wrp 250ct.	3	$30.22	$90.66
12	Fork Plastic Med Wt. Wht 1000/ea.	4	$11.26	$45.04
13	Knife Plastic Med Wt. Wht 1000/ea.	4	$10.34	$41.36
14	Spoon Plastic Med Wt. Wht 1000/ea.	3	$10.99	$32.97
15	Lid Plastic Dome 12/16/20oz. 8/125 ct.	8	$53.90	$431.20
16	Lid Plastic Clr. Dome 12/14/20oz. 20/50 ct.	1	$62.60	$62.60
17	Bowl Paper Hvy 12 oz. 4/250 ct.	2	$101.13	$202.26
18	Plate Paer Pulp 6in 8/125 ct.	6	$37.74	$226.44
19	Napkin Disp 12*17 12/418 ct.	12	$47.62	$571.44
20	Plate Paper Pulp 8.75 In. 4/125 ct.	6	$41.36	$248.16
21	Straw Plas Wrpd Jumbo 7.75" 4/500 ct.	3	$15.75	$47.25
22	Bag Sandwich Snk Pak 6*.75*7.25 2000/#19	1	$24.91	$24.91
			Total	**$4,152.01**

Per. Unit.

0.130 X 1500
0.130 X 1500

0.080 80 X5
0.086 86 X 4
0.095 95 X 2

$35.00 X 4
$35.00 X 4
$35.00 X 3

52 X 2

30 X 3

WASTE AUDIT

Participants: Chris Naylor, Jayne Nordstrom, Pete O'Donnell, Desi Ramirez
Alec Cooley, Brynn Demei

THE DEPOT							
Pre-Consumer			Post C				
Recyclable [lb]	Food Waste [lb]	Non-Recycle/Compost [lb]	Food Waste [lb]	Non-Compost/Recycle [lb]	Compostable [lb]	Cardboard [lb]	Office Paper [lb]
29	176	164	275	13	357	9	10

357 lbs of compostables thrown away.

Date: ##########

onsumer

Newspaper [lb]	Magazines [lb]	Glass [lb]	Plastic [lb]	Aluminum [lb]	Recyclable/ Non-Compostable [lb]
	10	35	24	1	15

How much to take big dumpster one?
How much for a smaller one?

QUESTIONNAIRE

Would you be willing to pay 5¢ more per cup for your coffee or smoothie knowing that the cup is compostable and composted by the Campus Recycling Center instead of ending up in a landfill?

Bring your own #?!* Cup

Name (Optional)	Yes	No	Name (Optional)	Yes	No
E. Brown	X		Marcy Borstiner	✓	
B. Schwab	X		Melissa Koster	✓	
[illegible]	X		Heidi Haun	✓	
Rebecca Tullis	X		Sarah Shakal	✓	
Annie Hehner	X		Noah Johnston	✓	
C. Tyler [illegible]	X		[illegible]	✓	
[illegible]	X		Kylee Bennett	✓	
[illegible]	X		Michelle Layer	✓	
Clara Major	X		Dane Crain	X	
Joe Giovanetti	X		[illegible]	✓	
Noelle Perlmutter	X		Bethany Small	✓	
Jeannine Welly	X		[illegible]	✓	
[illegible]	X		Terry Hehn	✓	
Naomia Robinson	X		Owen Ott	✓	
[illegible]			Nick A-[illegible]	X	
[illegible]		X	Jeff De Mark	X	
Sarah Calhoon	X		Rachel Hailstone	X	
Jegi Dunn	X		[illegible]	X	
Serena Forster	X		Erika Tully	X ✓	
Chris Hockeman	X		Maggie Donovan-[illegible]		
Gina Figueroa	X		Lauren [illegible]	X	

Hell Yes. Jason Myer

ERIKA MADISON YES!

Would you be willing to pay 5 cents more for your cup of coffee if you knew that your cup was compostable?

Ryan Haentjens
Heidi Snow
Sherry Y. Gore
Karmen Chase
Imelda [illegible]
[illegible]
Tamara Fisher
[illegible]
Jay Wright
brandi wells (I'LL PAY A Nickel!)
Kyle Moore
Heather Curia
D. WALKER
Yvonne Becker
deborahuayuan
Sarah E. Sullivan - But I don't usually use them
Jenny Bragg
Christina R. Janik
Idyath Yassemi
Jolynn Mahmoudi
MeredithEHerndon
Cory OConnor
Jessica D. Holloway
Hector E. Quiles

Group Timeline

By 10/29

Create posters & flyers for the Depot presentation
- Planning – Group
- Create poster – Jessica
- Create Flyers – Orion & Cherrie

By 11/5

Have completed the Implementation Strategies
- Write it and Type it – Cherrie & Heidi (by 11/3)
- Revisions – Cherrie, Heidi, & Jessica (11/5)

By 11/17

Have completed the Monitoring and Evaluations
- Write it – Group (by 11/8)
- Type and turn in – Heidi (by 11/17)
- Revisions – Jessica (by 11/19)

*****OVER THANKSGIVING BREAK *****

- Create another poster – Jessica
- "Grand Opening" Flyers – Cherrie
- Water & Coffee Flyers - Heidi
- Pick pictures for Power Point – Orion

By 12/8

Schedule a Presentation with Depot management
- Jessica

By 12/3

Create a Power Point presentation
- Put together pictures – Cherrie & Orion (by 11/29)
- Add text to pictures – Jessica & Heidi (by 12/1)

By 12/7

Pull report together
- Complete Revisions – Group during classes (by 12/3)
- Tie pieces in together – Jessica & Heidi (by 12/6)
- Bound Report – Group (by 12/6)

Jessica Cross' Hours

September 1st: 1 hour – Research
September 8th: 45 min – Research
September 13th: 30 min – Research
September 20th: 1:30 – Research
September 22nd: 1 hour – Problem Statement
September 27th: 20 min – Research
September 28th: 45 min – Problem Statement
September 29th: 30 min – Problem Statement
October 3rd: 2 hours – Research
October 4th: 20 min – Goals and Objectives
October 6th: 45 min – Goals and Objectives
October 11th: 1:15 – Alternatives
October 13th: 1 hour – Alternatives
October 18th: 45 min –Alternatives
October 20th: 20 min – Alternatives
October 24th: 50 min – Typing Alternatives
October 25th: 20 min – Implementation
October 27th: 2 hours – Making posters and flyers
November 1st: 1:15 – Implementation
November 2nd: 1 hour – Typing Implementation
November 3rd: 20 min – Research
November 8th: 1:30 – Research
November 10th: 30 min – Research
November 15th: 1:30 hours – Monitoring and Evaluation
November 17th: 20 min – Research
November 29th: 1 hour – Presentation Preparation
December 1st: 2:30 hours – Power Point Presentation
December 4th: 45 min – Power Point Presentation
December 5th: 3 hours – Power Point & Report Finalization
December 6th: 20 min – Overview
December 7th: 5 hours – Cost Analysis & Compost Cost
December 8th: 45 min – Presentation

Heidi Strow's Hours

September 1st: 1 hour - Research
September 8th: 1 hour - Research
September 13th: 1 hour - Research
September 20th: 30 minutes - Research
September 22nd: 30 minutes - Problem Statement
September 28th: 30 minutes - Problem Statement
September 29th: 45 minutes - Problem Statement
October 4th: 20 minutes - Goals and Objectives
October 6th: 45 minutes - Goals and Objectives
October 11th: 1.25 hours - Alternatives
October 13th: 1 hour - Alternatives
October 18th: 45 minutes - Alternatives
October 22nd: 1 hour - Research
October 25th: 20 minutes - Implementation
October 27th: 2 hours - Posters and Flyers
November 1st: 1.25 hours - Implementation
November 3rd: 1 hour - Research
November 8th: 30 minutes - Research
November 10th: 45 minutes - Research
November 15th: 1.5 hours - Monitoring and Evaluation
November 16th: 1.25 hours - Typing Monitoring and Evaluation
November 17th: 30 minutes - Research
November 29th: 1 hour - Presentation Preparation
December 1st: 2.5 hours - Power Point Presentation
December 4th: 45 minutes - Power Point Presentation
December 6th: 1 hour - Finishing Touches on Report
December 8th: 45 minutes – Presentation

Cherrie Chavez's Hours

September 1st: 1 hour – Brainstorming problems we would like to address
September 6th: 1 hour – Discussing waste reduction in the Depot
September 8th: Lecture on Goals and Objectives
September 13th: 1 hour – Brainstorming potential Goals and Objectives for waste reduction
September 15th: 2 hours – Researching waste reduction Alternatives for the Depot
September 20th: 1 hour – Researching Alternatives for the Depot
September 22nd: 2 ours – e-mailing green companies about their products
September 27th: 2 hours – Researching other schools and businesses that have successfully reduces amounts of waste produced
September 29th: 1 hour – Creating Problem Statement and Background
October 4th:2 hours – Creating Goals and Objectives
October 6th: 1:30 hours – Meeting with Depot manager to collaborate on Goals & Objectives
October 11th: Goals and Objectives due
October 13th: 2 hours – Discussing strategies for implementation of Goals & Objectives
October 18th: 2 hours – Creating Poster for Depot
October 20th: 1 hour – Creating alternatives & selecting preferred alternative
October 25th: 1:30 hours – Connecting with April Prusia to discuss preferred alternative
October 27th: 2 hours – Creating our Cost Comparison
November 1st: 2 hours – Creating Implementation Strategies
November 3rd: Implementation Strategies due
November 8th: 1 hour – Creating timeline upon which implementation will occur
November 10th: 1 hour – Meeting with Depot manager to fill him in
November 15th: 2 hours – Creating Monitoring & Evaluation Plan
November 17th: Monitoring & Evaluation due
November 22nd: 2 hours – Comparing prices for Greenhome & Sysco for Depot purchases
November 24th: 2 hours – Creating signs for Depot recycling bins
November 29th: 3 hours – Creating Power Point Presentation
December 1st: 3 hours – Finishing up Presentation
December 6th: 1 hour – Fine tuning Presentation
December 7th: 2 hours – Going over Presentation
December 8th: 45 min – Giving Presentation

Orion Waters' Hours

September 1st: 45 min – Research
September 8th: 1hr 15 min – Research
September 13th: 45 min – Research
September 20th: 1:15 hours – Research
September 22nd: 30 min – Input and editing for problem statement
September 27th: 45 min – Research
September 28th: 1 hour – Editing and research
September 29th: 45 min – Life cycle research
October 3rd: 1:30 hours – Research
October 4th: 25 min – Editing
October 6th: 1 hour – Rewriting
October 11th: 2 – Research on spill proof mugs
October 13th: 1 hour – Research
October 18th: 20 min –Editing
October 20th: 30 min – Editing
October 24th: 45 min – Research
October 25th: 1:30 hours – Fountain drink alternative implementation
October 27th: 2 hours – Creating educational flyers
November 1st: 45 min – Brainstorming
November 2nd: 20 min – Group work
November 3rd: 45 min – Graphic search
November 8th: 45 min – Research
November 10th: 25 min – Research
November 15th: 1:15 hours – Editing
November 17th: 25 min – Research
November 29th: 1:20 hours – Presentation Preparation
December 1st: 2:30 hours – Power Point Presentation
December 4th: 45 min – Power Point Presentation
December 5th: 2:30 hours – Power Point & Report Finalization
December 6th: 20 min – Group work
December 7th: 1:30 – Preparation for presentation
December 8th: 45 min – Presentation

QUESTIONNAIRE

Would you be willing to pay 5¢ more per cup for your coffee or smoothie knowing that the cup is compostable and composted by the Campus Recycling Center instead of ending up in a landfill?

Name (Optional)	Yes	No	Name (Optional)	Yes	No
	X		[illegible]	X	
Tiffany Bywaters	X		Pat DuRant	X	
	X		Rachael Mazur	X	
	X		MA	X	
	X		Beckie Menton	X	
Jerome Cum	X		Lorenza S.	X	
Heidi Loif	X		Katherine Carpenter	X	
MO	X		Krystal Rogers	X	
Nick Conroy		X	VICKI GRAHAM	X	
[redacted]		X	[redacted]		X
Joe Barnet	X		Alexis George	X	
Sill Sancic	✓		Jacqueline Abaulafia	X	
	X				
	X				
	X				
Felicity Hunt	X				
Tiffany Claxton	X				
Casey Carroll	X				
[illegible]	X				
Anne Dudley	X				
	X				

bring your own cups... ← I agree

Me 2

yes →

30 yes 3 no .1608

1608
9.
1512

99% yes
1% no out of 230

QUESTIONNAIRE

Would you be willing to pay 5¢ more per cup for your coffee or smoothie knowing that the cup is compostable and composted by the Campus Recycling Center instead of ending up in a landfill?

Name (Optional)	Yes	No	Name (Optional)	Yes	No
Shannon Kresge	✓		Elysia Steinberg-Ray	✓	
Kristine Parnum	✓		Brandie Glass	✓	
STACI SELF	✓		Rajoya Dixon	✓	
Thomas Koors	✓	✓	Kathleen Lowde	✓	
Kristina Karman	✓		[illegible]	✓	
Susan Magdaleno	✓		[illegible]	✓	
Talia Lewin	✓		Cherri	✓	
Jack States	✓				
Cecilia Rugburn	✓				
Jaime Ducatt	✓				
[illegible]	✓				
Claire Chapple	✓				
Beang Cao	✓				
[illegible]	✓				
[illegible]	✓				
[illegible]	✓				
Crystal Espinoza	✓				
Robin Robinson	✓				
Heather Meeks	✓				
[illegible]	✓				
Ryan Bahten	✓				

2
27
43
25
30
37

162 yes

6 no

168 total

96
168. | 162.0
1512
1080

.03
168 | 6.00
504

27 yes 2 NO
43 yes 1 NO
25 yes

QUESTIONNAIRE

Would you be willing to pay 5¢ more per cup for your coffee or smoothie knowing that the cup is compostable and composted by the Campus Recycling Center instead of ending up in a landfill?

Name (Optional)	Yes	No	Name (Optional)	Yes	No
Maya Kane	X		ROSE	X	
Laird Norgeot	X		Joni	X	
Jodi Pixley	X		Mike C.	X	
Nancy S. Ktnight	X		Wizolg H.	X	
Tessa Biederich	X		W.C.	X	
Amanda Beatty	X		Mariah Morris	X	
Kayla Headley	X		Jocelyn Godinho	X	
Liz	X		Tiffany Bulman	X	
Kate	X		Nicole Hunter	X	
Sarah M.	X		Peter Loetterle	X	
Ellen Gardner	X		Lorena Vancini	X	
Monica Pease	X		Tony Snow	X	
Jones Southworth	X		Olivier Coustan	X	
Lisa Murgatroyd	X		Andrew van Nort	X	
Michelle Bourgeault	X		Jessica Flayer	X	
Robbie	X		Brooke Gibson	X	
Josh	X				
Ryan	X				
Victoria Gutierrez	X				
Serena Stockdale	X				
Jennifer Chavez	X				

out of 168 polled
97% voted yes
3% voted no

37 yes

228 yes
6 no

Would you be willing to pay 5 cents more for your cup of coffee if you knew that your cup was compostable?

Heather Collins
Robbye Lanier
Gwyn Bartlett
[illegible]
Joshua Kuhnel
Brian Apple
Cheryl Griffith
Owen Cup
Andrea Davis (heckya!)
Jeffrey Hinton
Bert Eldridge
Stacey Kaufman
Vitek Jirinec
Lucas Siegfried
Jen Bosnell
Kristina Prosser (yes!)
Kayo Satake
James Cutler
Erik Manuel
Laura Hiesener
April Nairn
Heath Sawyer
Katie Castle
Katie Testa
Elizabeth Kimbrough
Roxana Flores
Georgia Haas (yes)

Cameron Bracken
~~Garrett Wilson~~
TAYLOR COOK
Mr. Peanut pants
yes but I bring my own cup from home
Andrea Mulat
Nathan Kananen
Jodie Marynowski
~~Craig Peters~~
Megan Kimberling
Pat McGee
Josh Taylor
Uriah Killam
Needs good definitely

QUESTIONNAIRE

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Name (Optional)	Yes	No	Name (Optional)	Yes	No
Melissa Gardner	X				
Jarrad Billuni	X				
Paul Arredondo	X				
David Murray	X				
KEVIN CLINE	X				
Rebecca Holzman	X				
Melissa Bodola	X				
Cisco Benemann	X				
Christina Throm	X				
Justin Daily	X				
Dixes says bring	X	your own cup			
Matt Carlson	X				
Joanna Zeigler	X				
Orion Waters	X				