



Creating a Zero Waste Culture:
Responsible Reuse and Recycling

The Ohio State University:
Achieving Zero Waste by 2025

Final Proposal Report

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Executive Summary

The focus of this proposal is to address the recycling contamination issue at Ohio State University, as well as to introduce initiatives that will progressively move Ohio State closer to its goal of achieving Zero Waste. Ohio State's Zero Waste goal is defined as 90% waste diversion from landfills by 2025. This is in response to a Request for Proposal from the OSU Office of Energy and Environment based on The President and Provost's Council on Sustainability and the Ohio State Sustainability Goals set forth in September 2015.

These strategies will assist The Ohio State University in creating a culture of sustainability through the adoption of educational and marketing strategies to directly support the reduction of waste and recycling contamination on campus. This proposal is comprised of two main goals, each constructed specifically to address these topics.

The focus of goal 1 is to minimize waste by educating all incoming students on responsible recycling techniques and the importance of using reusable containers. This will be achieved by instilling a sense of responsibility to a Zero Waste Campus as part of being a Buckeye. By providing a reusable mug to every student, students are reminded of their integral role. Additionally, removing convenience barriers through the implementation of refill stations provides accessibility to students, which supports reusable behaviors.

The focus of goal 2 is to reduce recycling contamination through a marketing campaign titled "*What Not To Recycle*". This campaign provides synergy with goal 1's initiative to provide a significant discount for every individual on campus using a reusable mug. Also, goal 2 includes altering current cafe menu labeling to market a reusable price and denote an additional price for the use of a disposable cup in an effort to normalize the use of reusable containers. The combination will aide in reducing recycling contamination and encourage an overall Zero Waste mindset.

To determine the effectiveness of the potential campaign, research surveys were conducted on campus; the findings support each proposed initiative. The independent surveys provided baseline data for current trends and the levels of awareness of sustainability initiatives.

A benchmarking analysis was conducted to compare all baseline data for OSU against current initiatives at other major universities according to one or more distinct categories: enrollment rates, diversion rates, AASHE STARS ratings, and related initiatives. The case studies presented provide an overview of successful programs implemented and potential projects which may be viable options for Ohio State to consider or expand upon.

In conclusion, this proposal is the result of concern over the high level of recycling contamination on campus and the lack of student focused waste minimization initiatives. This proposal provides a pathway that the university can follow to reduce its' waste stream through education, adoption of reusable alternatives on campus, and proper marketing techniques to reach the goal of a Zero Waste campus.

Introduction

In 2015, the President and Provost's Council on Sustainability adopted long-term sustainability goals for The Ohio State University “to validate Ohio State as a global model of sustainable operations and practices.” (PPCS Sustainability Goals) Areas of interest for these goals range from energy usage, to tree canopy cover, to purchasing sustainable products. The main area of focus for this proposal is the PPCS goal of Achieving Zero Waste by 2025 (Sustainability Goals Project Report, 2015). Zero Waste is defined by OSU as 90% waste diversion away from landfills. Ohio Stadium has achieved this goal of Zero Waste during the 2014 football season with an average 95.24% diversion rate (Facilities Operation and Development, 2014). This achievement propelled the administration to adopt this goal campus wide.

After discussing topics and listening to the presentation given by Aparna Dial, Director of Sustainability at Ohio State, the focus of the proposal was to examine means in which to reduce the waste generated by student life. In addition, the recycling contamination rates were a major concern for university officials. Therefore, the focus of this study centers on minimizing waste and reducing contamination to reach the Zero Waste goal.

A subsequent benchmarking analysis compared diversion rates and successful recycling programs from other major universities against The Ohio State University. This provided a relative rank, size and program comparison to support the final proposals. Compared to other universities, Ohio State has policies that are underutilized and could promote a sustainable culture if expanded. For example, discounts for coffee purchases already exist at most cafes on campus but the availability of discounts is not reflected in student behaviors or the number of refill purchases. Additionally, the initiatives proposed can be efficiently implemented with

relatively little cost. Emphasizing these current policies across main campus will enhance a sustainable culture for Ohio State and aid in achieving the goal of achieving Zero Waste by 2025.

Methodology

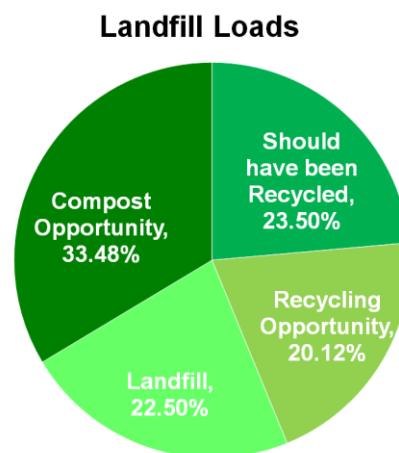
In order to assess the current status of Ohio State compared to other universities, baseline data was needed to further understand the current amount and breakdown of waste generated. Tony Gillund, a sustainability coordinator for OSU, provided the results of a waste audit conducted on main campus September 11th-12th, 2014 (Data Set 3). The audit consisted of examining waste from 129 campus buildings including academic, residence halls, administrative, research labs, and a multitude of other buildings. Trash and recycling was collected, weighed, and sorted from these locations to determine the total amount of waste and recycling the university disposed of on those days.

Results from the waste audit reveal a diversion rate of approximately 31%. The total waste generated from these two days amounts to 48,903.0 lbs., with 33,531.5 lbs. being sent to the landfill. Organics, plastic, and miscellaneous items comprise the greatest amount of material going to the landfill with 32.8%, 20.3%, and 24.4%, respectively. The greatest recycling numbers were from cardboard/paper, plastics, and miscellaneous with 64.0%, 13.5%, and 10.6%, respectively. Figure 1 shows the breakdown composition of the waste audit by materials in the trash containers (to be sent to the landfill) and the recycling containers. Figure 2 shows the percentage breakdown of overall landfill loads from the OSU waste audit; 43.62% of the total waste disposed of in the trash was considered recyclable or a recycling opportunity (items are recyclable but not collected as recyclables on OSU's campus).

Figure 1: Segregation and Audit Results

Categories	All Loads	% Total	Landfill Loads	Landfill % Total	Recycling Loads	Recycling % Total
Cardboard/ Paper	14,288.0 Lbs.	29.2%	4,444.0 Lbs.	13.3%	9,844.0 Lbs.	64.0%
Organics	11,531.0 Lbs.	23.6%	10,985.0 Lbs.	32.8%	546.0 Lbs.	3.6%
Miscellaneous	9,820.0 Lbs.	20.1%	8,184.5 Lbs.	24.4%	1,635.5 Lbs.	10.6%
Plastics	8,898.0 Lbs.	18.2%	6,823.0 Lbs.	20.3%	2,075.0 Lbs.	13.5%
C&D	1,779.5 Lbs.	3.6%	1,267.5 Lbs.	3.8%	512.0 Lbs.	3.3%
Metal	1,450.0 Lbs.	3.0%	930.0 Lbs.	2.8%	520.0 Lbs.	3.4%
Glass	704.0 Lbs.	1.4%	493.0 Lbs.	1.5%	211.0 Lbs.	1.4%
Electrical Components	432.5 Lbs.	0.9%	404.5 Lbs.	1.2%	28.0 Lbs.	0.2%
Grand Total	48,903.0 Lbs.	100.0%	33,531.5 Lbs.	100.0%	15,371.5 Lbs.	100.0%

Figure 2: Landfill Loads from OSU Waste Audit 2014



The results of the waste audit revealed areas of improvement for Ohio State, and current programs that are successful, based on materials disposed. The next step was to benchmark all data and programs against other universities in order to compare waste generation, diversion rates, and successful waste reduction initiatives. Additionally, student surveys were conducted to assess current trends as well as the salience of waste reduction and recycling at OSU for students

on main campus. Further, data from campus dining services was collected which provided a comparative baseline of coffee cup sales on campus, one of the major contaminants of OSU's recycling stream.

Benchmarking Analysis

The benchmarking analysis consisted of comparing trends and baseline data for OSU with similar universities according to one or more distinct categories: enrollment rates, diversion rates, AASHE STARS ratings, and related initiatives. AASHE STARS is a “transparent, self-reporting framework for colleges and universities to measure their sustainability performance” (AASHE STARS). The case studies presented provide an overview of successfully implemented programs and potential projects which may be viable options for Ohio State to consider or expand upon. Each university presented is working toward minimizing waste and increasing diversion rates but may have committed to a different definition of Zero Waste or may not have set forth an explicit goal.

Successful strategies for creating a culture of sustainability vary for each university and may be difficult to replicate. The pride of the Buckeye Nation provides an opportunity for OSU to easily integrate the goal of Zero Waste by 2025 across campus as part of every individual's role as a Buckeye. The universities in this benchmarking analysis were chosen because each had enrollment rate above 25,000, high waste diversion rates, and high AASHE STARS ranking. The universities are located across the country to include geographic diversity. Figure 3 shows the summary of the baseline benchmarking data for Ohio State University, University of North Carolina Chapel Hill, Arizona State University, University of Colorado Boulder, and Oregon State University. Total enrollment, current waste diversion rates, and AASHE STARS rankings are provided for comparison.

Figure 3: Summary Benchmarking Table

	The Ohio State University	University of North Carolina - Chapel Hill	Arizona State University	University of Colorado Boulder	Oregon State University
Enrollment	58,663 (2015)	29,135 (2014)	57,332 (2014)	32,775 (2014)	28,886 (2014)
Current Waste Diversion	31%	49.30%	26.50%	43.70%	40%
AASHE Waste Diversion Score	.91/3.00	1.26/3.00	.68/3.00	1.31/3.00	1.69/3.00
AASHE Waste Minimization Score	1.18/5.00	1.5/5.00	2.90/5.00	2.03/5.00	1.12/5.00

The Ohio State University

The Ohio State University supports numerous student lead organizations with sustainability focuses as well as limited waste minimization and waste diversion efforts on main campus. Recently, all trash, compost, and recycling containers were relabeled with new signage to clarify what items can be placed in each bin. This change was necessary to educate all individuals on campus about proper waste management. Additionally, there is minimal discount provided when using a reusable mug at Campus Grind cafe locations. The discount is only for hot coffee and customers can refill any reusable mug for the price of a small, saving either 0.35 cents off the price of a medium or 0.65 cents off the price of a large.

University of North Carolina- Chapel Hill

The University of North Carolina at Chapel Hill has outlined goals for the university and students as “ways to get involved and adopt sustainability as a core value in campus culture” (University of North Carolina Campus Sustainability Report, 2013) including a focus on sustainability initiatives during New Student Orientation. Scott Weir, Food District Manager of

Dining Services personally meets with new students to educate them about waste, recycling and their responsibility as students to be involved. Student focused initiatives at UNC include encouraging students to take the “Carolina Green Pledge”. The pledge requires a commitment to sustainable behaviors and offers an “Are You Carolina Green” water bottle once the pledge has been completed. UNC has also expanded the discount available for reusable beverage container refills from 10% to 20% for all hot and cold beverages at all Dining Services locations (AASHE STARS 2014). This two-sided approach shows a commitment to reducing waste through education and by providing reusable alternatives.

In combination with other waste minimization initiatives, these programs have resulted in a significant increase in total diversion rates and decrease in pounds of trash produced per capita. Based on data from The University of North Carolina at Chapel Hill Office of Waste Reduction and Recycling, Recycling Trend Report (2014-2015), from 2011-2012, 285.29 lbs. of trash and 169.7 lbs. of recycling were produced per capita. After waste minimization and recycling efforts were implemented and expanded, the 2014-2015 results showed a decrease to 275.25 lbs. of trash and an increase to 227.4 lbs. of recycling produced per capita. This is a difference of -10.4 pounds of trash and +57.7 pounds of recycling per capita.

Scott Weir, Food District Manager of Dining Services at UNC - Chapel Hill, expressed the university’s focus on educating all incoming students about their responsibility and role to minimize waste on campus and encourage reusables. “This is not an institutional change and is not voluntary. We approached classes of new students and had a realistic conversation about waste, recycling, and composting, including what the incentives are for each individual and the environment” (S. Weir, personal communication, Apr. 18, 2016). The interview with Mr. Weir

solidified the following recommendations for OSU to focus on students as the primary change agents for a Zero Waste initiative in a university setting.

Arizona State University

In the Spring of 2013, Arizona State University released a "Roadmap to Zero Waste" report which outlines in detail over 50 projects, descriptions, level of implementation and specifics involved for the success of each. These projects are organized into four areas: diversion, recycling, composting, and reuse. By clearly and concisely evaluating proposed and current initiatives, ASU provided themselves with a pathway to their Zero Waste by 2015 goal that included input and involvement from all divisions of their campuses. Although the university has not reached the goal as of the last released report, this type of evaluation is necessary to move forward.

Included in the report are multiple student focused initiatives which have led to ASU's increased diversion rates through educating new students and employees about zero waste and targeting new student and staff orientation. The university's waste minimization initiatives include a 99 cent discount for all reusable beverage containers on four ASU campuses. "Free reusable hot and cold mugs are distributed at various Sun Devil Dining events to promote the use of reusable drink containers and distributed 7,500 free reusable bottles during move-in across ASU campus locations. Reusable bottles and mugs are typically distributed during at least one other event throughout the academic year" (AASHE STARS 2014). ASU combined a clear pathway to expand current programs and implement new ones with a focus on students and student lead initiatives, ASU has created awareness of their goal and made it the responsibility of all involved to work toward Zero Waste. Ohio State could adopt greater distribution of reusable containers which ASU has proved to be successful in increasing diversion rates

University of Colorado Boulder

University of Colorado at Boulder is founded in a strong sense of sustainability. This is reflected in their current diversion rates, even with a small number of initiatives. The current diversion rate for University of Colorado is 43.7 percent. The reputation of the culture of sustainability encourages waste minimization and waste diversion in all aspects of student life and is backed by clear sustainability and Zero Waste goals. The Reusable Mug Program at University of Colorado offers customers a 20 cent discount when using a reusable mug and offers a frequent customer card to customers using a reusable mug. After the customer receives 10 punches on their card they are given a free cup of coffee (AASHE STARS 2014). This great sustainability culture at UC Boulder has successfully driven up their waste diversion rates, if mirrored at Ohio State it most likely will have similar success.

Oregon State University

The Oregon State University is a leader in sustainable efforts and has a strong campus culture of sustainability. Their current diversion rates are extremely high without an explicit Zero Waste goal announced. The University's current diversion rate is 40 percent (AASHE STARS 2016). Although there are only a few self-reported initiatives, the student focus shows that reinforcing reusable behaviors as a part of sustainable campus life can significantly impact diversion rates. The Campus Recycling and the Student Sustainability Initiative promotes the use of reusables over disposables by coordinating mug swap-outs. This is a student led initiative to approach students using disposable cups and "swap out" their cup for a reusable mug and sign a pledge. A "Coffee Cup Coup Campaign" on campus reinforces the reality that disposable cups are not recyclable and contribute to a significant portion of the waste stream contamination (Oregon State University- Campus Recycling). Oregon's success in student-focused programs

has resulted in high diversion rates; Ohio State would benefit from mimicking similar programs.

Data Analysis of Campus Grind Coffee Sales

In addition to the benchmarking analysis, Aparna Dial, Director of the Office of Energy Services and Sustainability, discussed the recycling contamination issue at OSU during the first discussion of OSU's sustainability goals. Recycling haulers have been denying the university's recycling due to the high level of contamination, an average rate of 35% contamination per ton. Specifically, the majority of contamination is caused by disposable coffee cups. Students are unaware that, in central Ohio, these cups cannot be recycled properly and should be thrown in the trash. The initial discussion with Aparna steered the project scope toward minimizing waste and reducing the overall contamination of the recycling stream.

Kathleen Grant, Operations Manager at Campus Grinds, provided data for hot coffee purchases at Campus Grinds cafes, the system of OSU's dining services which operates in libraries and academic buildings across campus. The numbers in Figure 4 reveal hot coffee purchases from Campus Grinds cafes during the week of March 22nd - March 28th, 2015. Other forms of espresso based drinks such as cappuccinos, lattes, and mochas are not included in these numbers. Approximately 4% of hot drip coffee purchases were refills using a reusable or previously purchased disposable cup.

Campus Grind's reusable policy states that if an individual brings in their own mug or refillable container they can receive a hot drip coffee for the price of a small. Hot drip coffee prices are as follows: small (12oz.) \$1.75, medium (16oz.) \$2.10, and large (20oz.) \$2.35. Using these prices and the quantities used above in figure 3, the average cost of a cup of hot coffee during the week of March 22nd - March 28th was \$2.04.

Figure 4: Hot Coffee Sales from Campus Grinds for week of March 22-28, 2015

Location	Small	Medium	Large	Refill
CFAES	348	318	116	41
Berry	1842	2085	901	208
Chem	815	938	502	32
Crane	857	722	280	33
Drinko	196	314	103	16
KSA	731	769	337	103
Prior	778	880	357	25
Terra	1771	1881	911	266
Vet Med	155	188	92	31
Total	7493	8095	3599	755

The contamination issue regarding coffee cups in the recycling stream is a unique challenge. Many of the university coffee locations have cost effective policies for the consumer which incentivizes reusables. However, hot coffee purchases as reusables make up only 4% of sales. An article published by Zheng and Kaiser found the elasticity of coffee and tea to be $-.083$; an decrease of 10% in price will lead to a .83% increase in quantity demanded (Zheng and Kaiser, 2008). This means a change in price will not greatly affect quantity demanded. With an elasticity of $-.083$, this approximately amounts to 20,236 hot coffee purchases sold if this reduction in price was achieved. On the other hand, cost savings of hot disposable cups not used due to the replacement of refills should be taken into account. If the current 4% of hot coffee sales increased to 10%, an estimated \$113.00 per week would be saved on the purchasing of the hot coffee cups themselves. An increase in quantity demanded would increase revenues for

Campus Grinds while reducing costs of hot coffee cups, even if only slightly, because of the adoption of reusable hot coffee containers.

The elasticity determined by Zheng and Kaiser shows that the elasticity of coffee is relatively inelastic; a decrease in price won't increase quantity demanded drastically. Therefore, other barriers of adoption must be present if the reusable rate for hot coffee purchases was merely 4%. Awareness and convenience may be two other major barriers of adoption that could lead to increased reusable rates.

Surveys

To assess the levels of awareness of waste minimization and recycling among students at OSU, two separate surveys were conducted on campus. The surveys also determined students' involvement in personal waste minimization efforts, recycling habits and education regarding proper recycling techniques. The results of both surveys further support the final recommendation to OSU to focus on students and current trends to reach the Zero Waste goal.

Survey #1

The first survey was created to determine if the marketing initiatives being proposed to reduce contamination would be effective in achieving Zero Waste. It consisted of five questions:

1. How much of your waste generated on campus do you recycle?
2. How often do you ride the CABS bus?
3. Do you notice the signage on the CABS bus?
4. Have you ever acted upon the promotion being advertised?
5. What is your year and major?

The results from this survey helped determine if a "What NOT to recycle" campaign would be effective in reaching students and aid in reducing contamination. The survey was successful in reaching a wide variety of students across multiple colleges on campus. The purpose was to gauge the likelihood of students acting upon the "What NOT to recycle"

marketing initiative. Additionally, this campaign could aid in the increase of proper recycling and decrease of recycling contamination which primarily results from disposable coffee cups. The goal is to make advertisements simple and easy for students in a stationary setting. Question four was the most important question in this survey, which had a positive response of 56%. If adopted, the campaign could serve as the initial step in increasing different marketing signage around campus.

Survey #2

The second survey conducted was created by project member Laura Hagler using Qualtrics OSU survey software. This survey was created for the dual purpose of providing specific research data for this proposal, as well as for a separate, required class, Rural Sociology 5540 - Population, Place and Environment. The questions were designed to assess student's level of awareness of and involvement in Zero Waste initiatives on main campus. All questions received responses from a maximum 109 individuals from various divisions of OSU across all years. Of the 109 responses, 48 were female and 61 were male. Basic demographic data from the results of survey 2 are provided below.

College of Respondent	Responses
Arts & Sciences	15
Business	5
CFAES	6
College of Engineering	21
College of Pharmacy	2
SENR	14
Fisher	15
EHE	2
Other	19
Total	99

Chart 1: Related division of OSU by response for survey 2

Year/Status	Responses
Freshman	12
Sophomore	32
Junior	23
Senior	34
Graduate student	1
Other	1
Staff/Faculty	0
Grand Total	103

Chart 2: Year/level by response for survey 2.

Survey questions were specifically designed for use in this proposal, and the results positively reinforce each of the recommended initiatives. Of 109 responses, 104 students stated they currently use reusable beverage container (reusable coffee mug, water bottle, etc.) on campus at least some of the time. Unfortunately, this does not reflect the current data gathered from campus cafes regarding hot coffee purchases using refills. The inconsistency in data results could be explained by a lack of marketing associated with reusable discounts, as well as a lack of convenience for all hot and cold beverage refills, including water.

Additionally, over half of the participants stated that current recycling signage at Ohio State does not clearly display what cannot be recycled. These responses could help to explain the continued high-levels of contamination after the recent relabeling of recycling and trash bins. An additional “What Not To Recycle” marketing campaign on CABS and in other strategic locations on campus are an opportunity for OSU to capitalize on current trends. Other supporting survey data is included in the appendix.

Recommendations

Goal 1 - Minimize Waste

The first goal includes recommendations to minimize waste at OSU before it enters the recycling or landfill streams. The focus is on minimizing waste on campus by implementing programs to create a Zero Waste Culture for all students through incentivizing the use of reusable alternatives and by reducing convenience barriers. The President and Provost’s Council on Sustainability has a strategic initiative to “promote everyday behavioral and cultural changes to make sustainability an integral part of being a Buckeye” (Sustainability Goals Project Report, 2015). Therefore, this goal will focus Zero Waste initiatives on incoming students to create a foundation of sustainable culture through their four year career at OSU, and set the example for

future students. Under this goal, the first recommendation is that OSU should provide water bottles and reusable mugs for students at orientation, during campus events, and at campus cafes to reinforce a Zero Waste mindset. Currently, some reusable containers are provided, but this initiative would provide high quality containers that are attractive and desired by students to support hot and cold beverages throughout their career at OSU. By providing these reusable alternatives, students will have the resources to minimize their waste and the support of the culture of Zero Waste during their time at OSU.

According to survey results, 81% of students stated that they carry a reusable container at least half of the time on campus. Therefore, students should have convenient locations to use and refill their containers, which would also incentivize more use from other students. Currently, there is no consistent policy for the implementation of water bottle refill stations on campus. The recommendation is for OSU to create a policy that requires any replaced or new water fountains include a water bottle refill station. New buildings on campus are installing these refill stations, but older buildings have not been retrofitted, even during remodeling. This policy advocates for a direct requirement for all stations around campus, both functioning and nonfunctioning, to be replaced with refill stations. This institutional change regarding water bottle refill stations would support the use of reusables by providing convenient access campus-wide and minimize waste produced by disposable containers.

Goal 2 - Reduce Contamination

The second goal includes recommendations to reduce recycling contamination at OSU by focusing on marketing reusable discounts and promoting proper recycling techniques. The first recommendation is to expand and implement signage regarding proper recycling techniques on campus through new and currently underused marketing channels to reduce contamination rates.

By expanding recycling advertisements to the Campus Area Bus System (CABS), recycling and waste minimization information would be seen by 5 million riders every year and a diverse student base (Transportation and Traffic Management). To advertise on CABS for 4 weeks, 80 advertisements on 40 buses costs \$80; therefore, this is a cost-effective advertising method. Figure 4 is an example of marketing material that could be used. This poster has already been created by OSU administration but is currently underutilized on campus (OSU Waste Audit Data). Currently, trash and recycling bins display what can be recycled, but according to the Survey #2 results, students responded that what cannot be recycled is unclear. Supplemental tools are readily available to convey information about what *not* to recycle on campus through the footprint.osu.edu website, but are not used efficiently. Therefore, CABS would be a new, cost efficient market to advertise this campaign.

Figure 4: What Not to be Recycled Poster



The second recommendation under goal two is to alter current cafe menu labeling to clearly market a reusable price and denote an additional price for the use of a disposable cup. Therefore, the standard price would be the price for a reusable container provided by the customer. There would be an additional price if the customer wanted a disposable cup.

Based on the 4% reusable rate found from the sales data regarding hot coffee purchases during the last week of March, there is much room for improvement in the adoption of reusable containers. A greater adoption of reusables will not only increase revenue but also decrease coffee cup costs at Campus Grinds locations. The alteration of cafe signage is an effort to make using a reusable container the norm and would involve coordination with dining services to effectively market the difference in price.

Potential Barriers

Survey #1 was conducted at the Ohio State Union to ensure a diverse sample and Survey #2 was sent out through class lists and social media. However, both surveys may result in possible self-reporting biases and limitations due to the design of the survey and limited number of respondents. The survey did not allow for individual input but rather categorical answers. The sample size of both surveys was rather small, with approximately 150 respondents from both.

Barriers to the coffee cup sales data include a limited time sample, operational error, and costs. One of the major concerns with the hot coffee sales data is a lack of a lengthy period of observation. One week of data does not reflect the 15 weeks a semester and one week of finals that is needed to understand OSU consumption habits of hot coffee sales. Also, seasonally these numbers may change with a decrease of hot coffee purchases during the spring and summer as consumers purchase more iced coffee, which does not receive a discount. Another major concern with this data is the operational error. The data is collected using a POS system where the first

button on the hot coffee purchasing window is the small price, the same price as a reusable. Cashiers may hit that button, instead of the reusable button just below it, causing a skew in the data provided. However, this skew may mean the actual amount of reusables was greater than what the data portrays. Costs data was derived using the costs associated with an average number of cups across all Campus Grinds locations; however, some locations do astronomically more sales than others and so the costs may not be distributed evenly. Also, Campus Grinds sells two brands of coffee with two different style cups. Variation in the sales numbers and brands may alter the cost assumptions.

One of the recommendations was to utilize the “What Not To Recycle” campaign was to advertise the signage on the CABS buses. A barrier to this is the unknown effectiveness of this marketing stream. Survey #1 attempted to clarify this effectiveness with question 4 but due to a limited sample size the results could be skewed. Understanding the student body’s willingness to act upon the signage presented in the CABS buses is a key factor in determining whether to utilize this stream.

Conclusion

This proposal is an attempt to promote sustainable initiatives that will help Ohio State make progressive steps towards achieving Zero Waste by 2025. It is also a result of concern for the high levels of recycling contamination by disposable cups on Ohio State's Campus. Through methodical research and surveying, it has been concluded that each proposed initiative will be effective. The initiatives will address not only Ohio State's goal of achieving Zero Waste, but also the issue of contamination by promoting a Culture of Sustainability as an integral part of being a Buckeye.

Students could potentially not accept the proposed initiatives resulting in proposal limitations. Expanding survey data through increasing the sample size across the university will allow a better understanding of what students are responsive towards. Further research towards cost of implementing such initiatives could provide backing for a future cost benefit analysis. This would in turn reinforce the enactment of the prospective initiatives.

This proposal also recommends a marketing initiative that will utilize new and innovative marketing strategies. Initial analysis revealed the most beneficial strategies for influencing awareness among students is through increased marketing, continued education, and sustainable alternatives. By increasing the success of current recycling on campus through marketing initiatives and decreasing the use of disposables through the promotion of reusable containers, The Ohio State University may further the culture of Zero Waste campus-wide to aide in achieving Zero Waste by 2025.

Appendix 1 - Datasets

Dataset #1: Survey 1 Data

Sources: First-person survey collection

Description: This data set includes the survey results from the 5-question survey that was conducted towards on campus students. This data was used to produce graphs in Survey #1.

Dataset #2: Qualtrics OSU Survey data

Sources: Qualtrics OSU Survey software

Description: The software was used to create a survey specific to this project in accordance with Rural Sociology 5540. The complete results and data set are attached.

Dataset #3: OSU Waste Audit Data

Sources: Tony Gillund - Sustainability Coordinator at The Ohio State University

Description: Results of 2014 waste audit conducted at OSU by the Office of Energy and Environment

Dataset #4: Hot Coffee Purchases

Sources: Kathy Grant, Operations Manager at Campus Grinds

Description: Sales figures of hot coffee purchases from nine campus grinds locations. In addition, the cost figures of purchasing the hot disposable coffee cups per sleeve.

Dataset #5: AASHE STARS Waste data

Sources: Waste minimization and waste diversion scores from AASHE STARS

Description: Provided by the ENR/AEDE 4567 group AASHE STARS

Appendix 2 - Sources Cited

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