Greening the Grab n’ Go: Reducing the Plastic Waste of Dining Services at St. Mary’s College of Maryland

An Independent Sustainability Project Submitted for Consideration to Professor Barry Muchnick For ENST 450: Applied Sustainability Practicum

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Executive Summary

This project aims to reduce plastic waste of the Grab n’ Go food service at St. Mary’s College of Maryland by stopping the usage of plastic bags and by replacing plastic utensils with compostable wooden utensils. Stopping the usage of plastic bags would be done most effectively by giving each student a reusable bag for usage at the Grab n’ Go. Students could purchase more bags at the Campus Bookstore if bags were to get lost, ripped, etc. This initiative would prevent the usage of 2,000 plastic bags per week. Plastic utensils would be replaced by compostable wooden utensils from the company Aspenware, which uses waste trees from the logging industry to produce utensils that could be collected and composted at the Campus Community Farm. A successful trial run with compostable utensils could help to start the composting of other compostable food service products that are already used at SMCM but that are thrown away with regular trash. I will be meeting with David Sansotta and Pat Hunt this summer (in charge of Bon Appetit dining services and Procurement at St. Mary’s, respectively) to discuss the designing and ordering of reusable bags and the trial run of Aspenware utensils. Both initiatives would be tried out during the fall 2015 semester.
**Introduction**

At St. Mary’s College of Maryland, the Grab n’ Go is a convenient and fast-paced food service. The Grab n’ Go is located in Lewis Quadrangle, between academic buildings and student housing. Run by Bon Appetit, the dining services management company at SMCM, the service allows for students to come to the Grab n’ Go and use meal swipes to select a certain number of food items, which students usually take with them in a plastic bag to consume somewhere else on campus. Due to the nature of this service, a meal at the Grab n’ Go creates more waste than a typical sit-down meal at the dining hall. Plastic food wrap, small plastic food labels, individual condiment packets, and disposable coffee cups are some of the varieties of plastic waste produced.

Plastic usage on college campuses, and in the United States in general, is becoming more of a concern over time as our rate of consumption of plastics increases. Plastics make up almost 13% of municipal waste in the U.S., with 32 million pounds of plastic waste generated in the U.S. in 2012. However less than 10% of plastics are recycled in the U.S.\(^1\). College campuses are a great place to try out new initiatives for reducing plastic waste because college students, dining services companies, faculty, staff, and administration are often environmentally-minded and are motivated to reduce their environmental footprint. SMCM in particular has an exciting opportunity to reduce its plastic usage. St. Mary’s students are passionate about the environment and can apply knowledge that they learn about sustainability after their time at SMCM. Bon Appetit shares this commitment to sustainability and could serve as a great example of a “green” dining services company. Also, by reducing its plastic waste, SMCM can reduce its

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environmental footprint and could serve as an example for other colleges and universities that share common goals with our institution.

Two of the plastic products that seem easiest to replace with more sustainable alternatives, and the ones on which I focus here, include plastic bags and plastic utensils. Students use plastic bags to carry food out of the Grab n’ Go, and students use plastic-bagged sets of plastic utensils in the Grab n’ Go as well as while taking food outside of the Great Room. I propose that Grab n’ Go stop purchasing plastic bags and instead allow for students to check out reusable to-go boxes or bring their own bags in to use. The school has already made the switch from disposable to reusable to-go boxes in the dining hall, and more of these reusable to-go boxes could be ordered so that students could check them out at the Grab n’ Go using the check-out system already in place. The Grab n’ Go could replace the currently used plastic utensils with biodegradable, compostable utensils, and the sets of utensils could be replaced with individual utensils so that students only take the utensils that they need. Setting up a system in which the utensils would actually be composted represents both a challenge and an exciting experiment with composting at SMCM, as several disposable compostable products are already on campus but are thrown away.

Reducing the amount of plastic waste generated at the Grab n’ Go through these initiatives would make the dining services on campus more sustainable, reduce litter and thereby improve campus aesthetics, educate students about composting and waste, and make changes that both students and dining services would feel good about. These proposed initiatives would reduce the campus’s environmental footprint by making swaps that, if implemented and communicated to students properly, could work well with the present dynamics of the Grab n’ Go dining service while reducing the amount of plastic waste that it generates.
Context

Bioplastics, plastics made from biological sources rather than oil, are a major substitute for petroleum-based plastics and an increasing popular topic for research. PLA (polylactic acid) is the most common bioplastic used in the manufacturing of biodegradable and compostable cutlery\(^2\). PLA utensils are typically made from starches, such as corn, potatoes, and beets.

Virtually all PLA plastics are biodegradable and some are compostable. Biodegradable materials break down into smaller and smaller pieces until these pieces are consumed by microorganisms\(^3\). Some biodegradable materials are compostable if they break down into “humus,” the organic component of soil. Compostable materials return nutrients to the soil and break down without releasing metals or toxins into the compost\(^4\). If compostable utensils were to be thrown away and taken to a landfill, they would still break down more completely than petroleum-based plastic utensils; although if put in a landfill, they would not return nutrients to the earth and would not form new soil. Degradation of plastic waste in landfills is a problem, as usually plastics degrade slowly in landfills, due to low levels of moisture, oxygen, and microorganisms\(^4\). As a result, even if compostable utensils were to sometimes be thrown away instead of composted, they would still break down more quickly in landfills than petroleum-based plastic utensils.

The major problem with using PLA utensils on SMCM’s campus is the fact that compostable PLA products must be composted in commercial composting facilities. The closest

commercial composter to St. Mary’s is 46 miles away in Upper Marlboro, and since SMCM does not currently have a composting program large enough to warrant the usage of a commercial facility, it would not be feasible to make trips to this composting facility solely to bring over used compostable utensils. Also, PLA products cannot be recycled with regular petroleum-based plastics, and since PLA products look very similar to plastic ones, some students would likely try to recycle them. Finally, most companies sell cases of 1,000 utensils for around $60 per case. This is almost double the cost of petroleum-based plastic utensils, as Bon Appetit currently pays $25.45 per 1,000 utensils. Finally, several colleges and universities have had problems with PLA plastic utensils and have had to switch back to petroleum-based plastic or to alternative compostable materials such as wood, as outlined in the next section.

Case Studies

The sustainability of dining services plays a large role in the environmental footprint of a college or university, so dining halls and other on-campus eateries are often targets of sustainability projects. There are several examples of colleges and universities replacing plastic utensils with compostable alternatives, and patterns in these case studies indicate some common problems with compostable utensils.

Ithaca College replaced plastic utensils with PLA bioplastic compostable utensils, which were collected in composting bins on campus and taken to a commercial composting facility nearby. The utensils did not break down within the amount of time specified on the product’s website. As a result the commercial composter banned the utensils from the facility and spent an

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estimated $21,000 in one year in order to remove the cutlery from the compost. Apparently the
utensils were not certified as compostable by the BPI (Biodegradable Products Institute),
although the BPI seal was on the utensil company’s website. In a study by Green Mountain
Compost, nine brands of utensils were composted, and the brand of utensils used at Ithaca
(Green Wave) was the only brand out of the nine tested that remained intact at the end of the
testing.

University of California Davis is another school which has experienced problems with
PLA utensils. In an effort to work towards the campus-wide goal of achieving zero landfill-
bound waste by 2020, Dining Services at UC Davis began using bioplastic compostable
utensils. Apparently the bioplastic utensils looked similar to the regular plastic ones, so students
often incorrectly disposed of them in the trash. Other problems with the bioplastics included the
bioplastics being recycled and thus contaminating the recycling stream, as well as bioplastics not
breaking down properly at commercial composting facilities and some facilities not accepting
bioplastics for licensing reasons. In 2012 the sustainability manager for UC Davis dining
services decided to replace the bioplastic cutlery with compostable wooden cutlery from the
company Aspenware. Since these utensils are wooden, the school was able to compost them via
backyard composting rather than commercial composting processes. Also the utensils do not
appear to be made of plastic, which reminds students that they should be composted rather than
thrown away. Overall Aspenware utensils have been a success at UC Davis, and are used at on-
campus events, some dining halls, and various other on-campus eateries.

The Ithaca College case study highlights the importance in carefully choosing a type and
brand of compostable utensil that is appropriate for the composting facility or setup of the

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college or university. More research prior to the purchase of bulk amounts of this brand of bioplastic products could have prevented the problems which were experienced at the composting facility. UC Davis also had some issues with bioplastics, which they resolved by replacing the bioplastics with another product and by stepping up the amount of student education on where to dispose of different kinds of waste. Both case studies highlight the importance of caution in choosing materials, and the UC Davis case also stresses the importance of student environmental education in the success of college waste reduction programs.

Other colleges and universities have set out to reduce their usage of plastic bags, whether by dining services or by on-campus stores. Many institutions have gone so far as to enact “bag bans” or taxes on plastic or paper bags, often with negative feedback from students. American University enacted a bag ban, and a year later students still described the plastic bag ban as “onerous, unnecessary, and invasive” and frequently wrote angry letters to the campus newspaper⁹. The problem seemed to be that there was no replacement for the banned plastic bags except for by reusable bags or carrying purchases by hand. This places all of the responsibilities of owning, cleaning, and bringing around reusable bags on the student.

A campus-wide plastic bag ban such as this one is of course on a larger scale than the proposed initiative of discontinuing the purchase of plastic bags for the purposes of the Grab n’ Go, however this case study is still informative in looking at common complaints from college students from certain waste reduction programs. According to this example from American University, it seems that if a bag ban is to be effective, there should be a better replacement for the plastic bags than student-owned reusable bags. At SMCM, checking out reusable to-go boxes

would replace the usage of plastic bags at the Grab n’ Go, and the only responsibility that this would place on the students is the eventual return of the boxes so that they can be cleaned and re-used.

**Plastic Bag Project Overview**

The project to discontinue the purchase of plastic bags by Dining Services for the Grab n’ Go can be divided into two major steps: Purchasing of materials and the Announcement of the change to students. Monitoring the success of the program should follow.

**Purchasing of materials**

Bon Appetit currently spends $51.72 to purchase about 2,000 plastic bags to be used at the Grab n’ Go every week. Bon Appetit would have to order more reusable-to-go boxes, which cost $49.99 for a case of 12, and subsequently phase out the purchase of plastic bags completely. There is a computer at the Grab n’ Go at which the Bon Appetit staff can use the system that is already in place to check out to-go boxes for students. Since to-go boxes are somewhat bulkier and more difficult to carry than plastic bags, students who bike or longboard around campus may want to bring in their own bag, whether it be plastic or reusable, to use at the Grab n’ Go rather than checking out a to-go box. However, the possibility of a larger-scale program in which students would use a bag and leave it in the Grab n’ Go to be reused is impeded by the fact that students with allergies could have problems if certain foods were to come into contact with the plastic bags. Finally, dirty to-go boxes can be collected at the Grab n’ Go and transported to the dining hall for washing, as is currently done.

Unfortunately, there is currently a problem with SMCM students throwing away or losing reusable to-go boxes instead of returning them for cleaning at the dining hall. Bon Appetit has
already spent almost $2,000 on 480 new to-go boxes just this semester to replace these missing boxes. Students are allowed to check out 2 boxes at a time, and in the past a student’s account was billed if that student did not bring back their 2 boxes by the end of the semester. However, this charge is no longer in effect because Bon Appetit decided to do away with it. Re-implementing the student charges for lost/missing boxes and even increasing that charge from the original amount that was used would motivate students to use the reusable to-go boxes properly. This would both solve a problem with an existing sustainability initiative at the college and help to make this proposed initiative at the Grab n’ Go successful.

Announcement of the change to students

Most of the work for this project lies in communication and planning with Bon Appetit, and announcing this new project to students could be as simple as a few all-student emails. The plastic bag t-shirt bag is a particularly infamous character in the lineup of plastic products, and the reusable to-go boxes are already used successfully at SMCM, so students would likely be supportive of the idea of discontinuing the purchase of new bags by the Grab n’ Go. However, student feedback of the project should be monitored, possibly by emailing out a survey similar to the one that I have drafted below in the Appendix. Also, communication with Bon Appetit should remain open to see whether or not the to-go box charge is working to prevent students from throwing to-go boxes away, and to see how well the reusable to-go box program is working at the Grab n’ Go.

Compostable Utensil Project Overview

The compostable utensil project proposal can be divided into three major sections: Purchasing of materials, Implementation, and Education. The necessary research and my
recommendation for the materials needed for this project are included here, whereas Implementation and Education are parts of this project to take place somewhat simultaneously during a trial run in the future. Monitoring the success of the program should follow.

**Purchasing of materials**

The dining hall and the Grab n’ Go currently spends about $95.45 a week on 1,250 sets of plastic utensils. Each set contains one fork, knife, and spoon which come in a plastic bag. Overall Bon Appetit pays $25.45 per 1,000 plastic utensils, as previously mentioned. Although reusable utensils are truly the most sustainable option, disposable utensils are needed for the Grab n’ Go due to the nature of the dining service. I recommend the purchase of wooden compostable utensils from the Canadian company Aspenware. Aspenware cutlery is made from sustainably harvested birch, poplar, and aspen trees, which are often underutilized in the logging industry. These trees are typically burned as a waste product of the softwood lumber industry; however, Aspenware instead uses them to manufacture forks, spoons, and knives. The utensils are disposable, biodegradable, and compostable in a home composting setup, in which they should break down within 90 days, according to the Aspenware website, or in a commercial facility.

At $65 per case of 1,000 utensils, Aspenware utensils are similarly priced to bioplastic cutlery but have considerably more advantages over bioplastic. Wooden cutlery has unique enough of an appearance to remind students that it should be composted rather than thrown away or recycled (see Figure 1 of the Appendix). Also, unlike PLA cutlery, wooden cutlery does not use food sources as raw materials, alleviating a possible ethical dilemma in a world that already

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fails to feed all of its inhabitants. However, the main advantage that Aspenware has over PLA bioplastic utensils in the context of SMCM is that Aspenware does not need to be composted at a commercial facility. Transporting the used collected utensils to the commercial facility 46 miles away from campus would not be feasible unless a larger-scale composting program were to be established at SMCM.

Permission and support from Bon Appetit must be present in order for a trial run of using the compostable utensils to take place. For this trial run, Bon Appetit could order one case each of forks, spoons, and knives, as individual utensils should be ordered rather than sets of utensils so that students take only the utensils which they need. If a trial run were to be successful, then Bon Appetit could consider discontinuing the purchase of the sets of plastic utensils and switching permanently to the compostable counterparts.

A successful trial run with compostable utensils could also be the first step in improving SMCM’s existing composting program. Several disposable compostable food service products are already used on campus, such as plates and ice cream cups used in the Great Room and smoothie cups used in the Daily Grind. These products are marked as BPI-certified as “compostable” but are currently thrown away and taken to the landfill. The compostable utensil project may increase the accessibility of compost bins, the rate of composting, and student education of composting and waste disposal enough to make the composting of these other food service products possible on campus.

**Implementation**

After the purchase of compostable utensils for a trial run, several bins would need to be set up around campus to collect the compostable utensils after students use them. These bins
would not have to be costly or official, and for the purposes of a trial run could simply take the form of cardboard boxes or plastic bins that are decorated well enough as to denote their purpose. Several of these bins would be required around campus due to the fact that most students take their Grab n’ Go food outside of the Grab n’ Go itself, and due to the fact that the dining hall would also be using these compostable utensils for when students check out to-go boxes. The utensils could be collected from the compost bins by the Sustainability Office interns while they collect compost from around campus, as is currently done each week.

After collecting the utensils, they could be transported to the Campus Community Farm to be added to the compost there. An alternative to composting the utensils at the Campus Community Farm would be to add the utensils to the compost of a local farm with a larger composting setup, such as Chesapeake’s Bounty in St. Leonard, Maryland. The compost setup at Chesapeake’s Bounty is large and hot enough to handle the wooden utensils, and could also handle other disposable compostable food service products. The compostable products would have to be transported to the local farm, but a deal could be worked out between St. Mary’s and such a farm in which utensils are brought from SMCM to be added to the farm’s compost in exchange for the transport of some of the farm’s produce to SMCM, where it could be used by Bon Appetit or sold at the Tuesday farmers markets that are held for students in the Daily Grind. This could improve the composting program at SMM, increase SMCM’s usage of local produce, involve SMCM with the local community, and help to foster the college’s reputation as a green school.
Education

Student education would be just as important as sourcing and using the compostable materials themselves. This is clear due to fact that compostable food service products are not composted at SMCM. Several BPI-certified compostable items are already used on campus, as previously mentioned. There is currently no program in place to have these products actually composted, so they are thrown away and sent to the landfill with regular trash. This project would be an initial experiment in educating the St. Mary’s community about compostable products and composting. Ideally, in the future, these compostable items that are already in use on campus would be separated from regular trash in the waste stream and would be composted. With enough effort, interest, and environmental education, members of the St. Mary’s community could eventually be aware of which products are compostable and where to dispose of these products.

The compostable utensil program could be announced to students through several all-student emails, and would be announced to Bon Appetit staff members that work in the Grab n’ Go or in the Great Room. Background information of composting, information about the Aspenware utensils, locations of compost bins on campus, and an overview of the compostable utensil program should be communicated through these “announcements” to students and staff.

Students would likely be supportive of the use of compostable utensils over traditional petroleum-based plastic ones. A trait common among many St. Mary’s students is a strong connection to the local environment, eliciting a good deal of environmental consciousness within much of the student body. Plus, with the expanding Environmental Studies program at St. Mary’s, the college is beginning to experience a certain momentum which will likely increase
student interest and involvement in sustainability initiatives on campus. However, students do not want to be inconvenienced with having to worry about putting their compostable disposables, recyclables, and landfill trash in their appropriate containers, especially because students usually do not eat their Grab n’ Go food within the Grab n’ Go itself. This represents a great challenge to this project that could only be overcome through enthusiastic student outreach and education about “what goes where and why.” Andrew Braker, a fellow ENST450 student, has researched and made signage for the Grab n’ Go with the purpose of educating students about composting, recycling, and waste disposal. The combination of accessible, labeled compost containers on campus with a student outreach program comprised of informative emails and signage could be enough to create a successful collection program for the compostable utensils.

Finally, monitoring the success of the program would be an important future step to follow up the implementation of these changes to the Grab n’ Go, and would likely involve an all-student email containing a survey on student opinion of the compostable utensils and reusable to-go boxes. Such a survey could be administered through Google Forms, and would be sent out a while after the implementation of the project so that any necessary updates or changes could be made to these sustainability initiatives. A sample survey is contained in the Appendix. Continued communication with Bon Appetit would also be necessary in order to allow for the changes at the Grab n’ Go to really take hold, and to discuss about any problems that Bon Appetit may have encountered during a trial run of using the compostable utensils. Finally, communication between SMCM and the composter (the Campus Farm or a local farm) and would be important to ensure that the compostable utensils are breaking down properly into compost and whether they are doing so within an acceptable time frame.
Outcomes

While discussing the plastic bag and compostable utensils project proposals with David Sansotta from Bon Appetit, I learned that the Grab n’ Go cannot accept a large quantity of used reusable to-go boxes because they do not have a dishwasher there. Even if the dirty boxes were to be brought to the Great Room for cleaning, health code violations would prevent the Grab n’ Go staff from accepting so many dirty to-go boxes.

I also learned from David that SMCM students have never been charged money for failing to return reusable to-go boxes. It would be up to the administration, and not Bon Appetit, to implement such a charge, but the administration has apparently always wanted to avoid implementing this charge. However, Bon Appetit is planning on trying out a new program in the fall which involves every SMCM student receiving one reusable bag for use at the Grab n’ Go. Students would not pay for this bag, but would have to bring it with them and would have to occasionally wash the bag. If students lose the bag that is given to them then they could buy another one from the Campus Bookstore. If this reusable bag program were to be implemented then the Grab n’ Go could fully stop purchasing plastic bags.

I will be meeting with Pat Hunt, who is in charge of Procurement at St. Mary’s, and David Sansotta this summer to discuss the purchase of reusable bags for the reusable bag program and to discuss the trial run of Aspenware utensils. Both the reusable bag and compostable utensil programs would be tried out during the fall 2015 semester.

Conclusions

Two projects have been proposed with the goal of reducing the plastic waste generated by the Grab n’ Go, with varying degrees of complexity, difficulty, and project length.
The plastic bag project would likely be popular among students on campus due to the fact that the basis of the project is a simple swap between plastic bags and reusable bags. Students could bring in their own plastic or reusable bags but would not be able to get new plastic bags from the Grab n’ Go. Overall, this project should help to “green” the Grab n’ Go without inconveniencing the students or the Bon Appetit staff members.

The compostable utensil project is more experimental in nature as there is no system of composting food service products in place. However this initiative holds great potential for expanding the school’s composting program. Consequently, a trial run should be carried out before any long-term decisions are made. A trial run is a great way to test the feasibility of using compostable food service products at SMCM without purchasing bulk amounts of these products, without immediately doing away with the old products, and without making large commitments or changes to the dynamics of the dining services on campus. A successful trial run could serve as a promising sign for the future growth of composting at SMCM. For this trial run, Bon Appetit could order Aspenware wooden compostable utensils, which could be collected in compost bins in several locations on campus and then taken to the Campus Farm for composting.

Increasing student environmental awareness, making SMCM more sustainable without greatly changing the everyday actions of the students and staff, and decreasing campus waste and are all current goals that members of the St. Mary’s community have for the school within the context of sustainability. Stopping the purchasing of plastic bags and utensils by Bon Appetit for usage at the Grab n’ Go while replacing these items with reusable bags and compostable utensils are two possible initiatives which could work to accomplish some of these broad sustainability goals.
Recommendations

I recommend that reusable bags be designed and ordered over this summer and that bags be given to students before the re-opening of the Grab n’ Go for the fall 2015 semester. All-student emails would have to be sent out to announce this imitative and to communicate that more bags can be purchased at the Campus Bookstore. Even though this project does not utilize reusable to-go boxes as I had originally proposed, the reusable to-go box program should still be improved, as it is currently costing Bon Appetit thousands of dollars per semester. Re-implementing and possibly increasing the student charge for failing to return reusable to-go boxes would be necessary to ensure the success of this existing initiative. Communication with the administration would have to be opened up on this subject in order to discuss implementing this charge for failing to return to-go boxes.

I recommend that a trial run of the usage of compostable utensils at the Grab n’ Go be carried out during the fall 2015 semester. This would be preferably done with the brand Aspenware, since this brand’s utensils are made from logging waste rather than food sources and they can be composted in a home composting setup. Communication between myself, Bon Appetit, and Pat Hunt would all be necessary before starting the trial run in order to get the utensils ordered, and composting bins/boxes set up, and educational materials ready. Communication between myself and members of the campus community (particularly SMCM students), through announcement emails, the possible email survey, and educational flyers, would be necessary from the beginning the trial all the way through to the end. Which aspects of the trial went well, which aspects of the trial went poorly, whether the particular brand of utensils worked well, and what should be changed for the future should all be considered after the ending
of such a trial run, and Bon Appetit should determine whether or not the usage of compostable utensils at the Grab n’ Go was a success.

If this trial run were to be a relative success, then I would recommend using this trial run as an opportunity to increase the visibility of composting on campus. Several BPI-certified compostable products are already used on campus, and they cost more than their non-compostable counterparts. We are already spending the money for these more sustainable alternatives, however, there is no program in place to actually compost them, and experiments in on-campus composting such as the trial run that I have detailed here could spark interest in putting such a program in place. If composting were to gain enough momentum on campus, eventually SMCM students may want to expand the composting program on campus, even going so far as to propose initiatives in composting dining hall food waste from the back or front of the house and having this compost sent to a commercial composting facility. Making the composting program this much of a success at St. Mary’s would take a great deal of change, communication, and education, but this proposed initiative would provide a starting point for such a program to form.
Works Cited


Appendix

Figure 1. Picture from Humbolt State University of Aspenware compostable wooden utensils, which replaced the bioplastic cutlery that the campus had previously used.
Sample Student Survey to Monitor Success of Grab n’ Go Project

Please circle one

Compostable Utensils
Performance of compostable utensils
0 1 2 3 4 5 6 7 8 9 10
Satisfaction with use of compostable utensils at Grab n’ Go
0 1 2 3 4 5 6 7 8 9 10
Effectiveness of public outreach/education
0 1 2 3 4 5 6 7 8 9 10
Knowledge of what is compostable/recyclable
0 1 2 3 4 5 6 7 8 9 10
Accessibility/Effectiveness of compost bins
0 1 2 3 4 5 6 7 8 9 10
Comments?

Replacement of Plastic Bags with To-go Boxes
Overall ease of using reusable to-go boxes at Grab n’ Go
0 1 2 3 4 5 6 7 8 9 10
Satisfaction with use of reusable to-go boxes instead of plastic bags at Grab n’ Go
0 1 2 3 4 5 6 7 8 9 10
Comments?