

# Waste Reduction and Recycling

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The Sustainability Center was made to help the campus improve on its environmental standards. The director of this program is Jeff Severin who has started with KU to help reduce its energy consumption and to assist with ideas to reduce waste. Many students have researched possibilities in exploring other aspects that involve campus sustainability; however, this portion will concentrate on the goals of reducing the amount of waste that is accumulating in areas of food service and increasing the number of people who recycle. We will also examine behaviors that explore the reasons why people do not recycle as they should. Many people misinterpret the importance of recycling and the benefits that can result. Recycling at The University of Kansas has become an issue of concern and the campus has attempted to resolve this by creating The Recycling Center.

The Recycling Center has made a tremendous effort to raise awareness about the importance of recycling and to make it more convenient. They have created a website to show what kinds of materials can be recycled on campus, such as newspapers, bottles, cans and office paper, where they can be recycled, and collection schedules for specific items. This website includes many tips on how to reduce waste and announces events and projects that the recycling center is involved with. One such project involved giving away 2000 reusable mugs to reduce the half million disposable paper cups that enter the waste stream each year. They found that it will save five tons per year on disposable products. If a student drinks a 16 ounce coffee everyday, she could save \$70 a semester with a reusable mug. They have done a wonderful job in helping to resolve the issue and have provided a good place where students and faculty can gain awareness. The difficulty, however, is getting people to even look at the website and understand how to

become part of the solution. The goal now is to involve more people and help them understand how reducing waste and recycling will influence their lives in a positive way, in the future.

Though it is difficult to change others, more people need to get involved as a whole in waste reduction and recycling, because it is all for a common good towards our future. Many people believe that recycling does not give them a direct benefit; therefore, they do not give much importance to the issue. Students may become more active if given an incentive, such as adding pennies to their KU account according to how much they recycle. It seems that KU uses ID numbers for almost all things, so if students could just swipe their card and get a refund at a machine or at the recycling center they would likely be more apt to recycle. Though it may not be much it could certainly add up. As technology advances maybe this idea could come into reality. Maybe for 10 bottles, \$0.02 could be added if the college can afford it.

Finally, an awareness campaign of sorts is needed to remind people of the long term economic and environmental benefits of recycling. It seems that the more frequent that an issue is being talked about the more importance and respect people give that issue. Things that could be listed on posters could be the benefits of recycling and waste reduction. Waste reduction can reduce disposal costs and decrease purchasing costs for KU. The Recycling Center gains revenue from recyclables. Recycling conserves virgin resources in our forests and mines by reusing materials instead of burying it in landfills. Reducing waste lengthens the lifespan of existing landfills and reduces the need for new ones. Composting reduces wastes such as food scraps, leaves, and yard trimmings. Once it is all mixed together it is made into humus which can be put into the soils. This could

really help the food dine-in areas on campus with cutting food disposal costs and turning that into something else reusable to take care of the campus landscape through fertilization and erosion control. Recycling often produces better products than those made of natural materials. Tin cans are more refined and more valuable after being processed for recycling. Recycling also saves on energy and lowers greenhouse gas emissions because supplying recycled materials to industry requires the consumption of fewer fossil fuels than supplying virgin materials. According to the Pennsylvania Department of Environmental Protection, recycling one aluminum can could save enough electricity to light a 100-watt bulb for approximately 3 and a half hours! Finally, recycling creates more jobs for people and is good economics because one will be turning waste into valuable products. There are so many benefits; however, the first step toward change is to get people to think from an environmental perspective. To do that, the common behaviors associated with not contributing or caring about waste reduction should be looked at. (Pennsylvania)

Recycling on campus is easy and extremely worthwhile. In fact, with over 350 recycling bins on campus, recycling is almost as easy as just throwing something away. So, why are goods that can be recycled not always recycled? Part of the problem is that people have come to believe that there is an “away” to throw trash. Other people believe that their contribution to the cause can do little to help the situation, and still others are simply lazy. A trash audit conducted by the Environmental Stewardship Program on April 19 last year revealed that in a single day’s trash yield, students threw away over 160 lbs. of recyclable goods in Wescoe alone. Over 150 lbs. could have been recycled right there in the building. Although this was a step in the right direction when compared

to 2004's total of 350 lbs., there is still a great deal of work to do ("Trash Audit"). This paper will develop a background analysis of people's attitude and behavior with respect to recycling on campus.

A behavioral psychologist would explain our actions with regards to recycling as a function of our environment. In other words, we behave in correlation to our situational surroundings in the physical, social, political, and economic realms (Winter and Koger 88). Our environment prompts particular behaviors, which are pursued by either positive or negative consequences. Pavlov's theory states that we learn to shape associations between stimuli in our environment, and between our actions and their perceived value within our environment. While 350 recycling centers may seem like a great deal, it is actually rather miniscule when one considers the entire campus and all of its different buildings, floors, offices, and rooms, all of which house miscellaneous trash cans. This ratio not only condones, but also encourages apathy and non sustainable behavior.

The first theory that I would employ in creating an improvement plan would be the Behavior theory. People in American society have been deemed creatures of habit. We are generally stubborn with regards to our beliefs, staying ever loyal to our individual opinions which are whole heartedly encouraged in our capitalistically driven society. I believe that because of our individualistic nature and stubbornness, attitude change must follow behavior. By controlling people within our environment we can eliminate waste thrown away by people ignorant to the service of recycling and its benefits, by people who do know the benefits of the activity, but perceive barriers like inconvenience to be too great to overcome, and by people who are conscious of the activity and its benefits and

see no significant barriers, but continue to not partake in the activity because its just easier.

Even environmentally conscious people sometimes throw things away. They might not be able to find a proper recycling bin for their particular waste product or they might not feel they have the time to get to a bin. Whatever the reason, recycling is sometimes seen as an inconvenience and other times it is not even seen (as an option) at all. To combat this problem I would implement what Pavlov calls a negative punishment for throwing recyclables away. After all, the Wescoe trash audits have shown that approximately 80% of trash thrown away is recyclable ("Trash Audit"). The negative punishment would involve the drastic reduction in the amount of miscellaneous trash cans available for throw away material. By reducing the amount of trash cans we will be making it much more inconvenient to not recycle than it is to recycle, positively reinforcing recycling (Winter and Koger 90). By dramatically reducing the number of miscellaneous trash cans, we are removing a stimuli associated with convenience. Of course in order to do this we will have to make the availability of recycling bins much more prevalent and efficient. It would be my hope for the conscious and continuous act of recycling on campus to result in an overall change in attitude, and most importantly behavior, not only on campus, but at home as well.

Human behavior can, and must, be changed. To do this quickly and in the most effective manner, it must be controlled. Concisely, we must eliminate the ability to be apathetic, and provide relevant disposal methods for the type and amount of waste produced on campus. To test student behavior, we conducted our own "trash audit".

Currently located in the hallways of Wescoe's fourth floor, there are recycle bins for #1 plastic bottles, aluminum cans, office paper, and newspapers. We wondered if a difference could be made in the amount of waste that gets recycled by placing similar containers in the classroom, eliminating the effort needed to locate the bins in the hallway. We hypothesized that a person walking by the trashcan on the way out of or into a classroom could then just as easily toss a recyclable item into the recycle bin as into the trashcan. Ideally, there would be a divided bin in each classroom with spaces for any recyclable materials and waste items. A similar container is being used in the dormitories at Ohio University. (Recycling)

**CAMPUS**  **RECYCLING**

**[www.facilities.ohiou.edu/recycle/](http://www.facilities.ohiou.edu/recycle/) • 593-0231**

**Newspaper,  
Magazine/Catalogs**

**Cardboard/Paperboard**  
Boxes, Cartons,  
Pizza Boxes,  
Notebook Covers

**White/Color Paper**



**Tin/Beverage Cans**

**Plastic Bottles**

**Glass Bottles**

**NO**  
**Tissues/Paper Towels/Food**  
Check website for more info.

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**Conserve Energy - Turn off lights, computer etc. when not in use.**  
[www.facilities.ohiou.edu/vestar/](http://www.facilities.ohiou.edu/vestar/)

**85% of waste is recyclable - Lead by example, **RECYCLE!****

Please note, this recycling unit is recorded on your RCR (Room Condition Report).  
It belongs in your room and must be in good condition when you leave.  
Replacement costs will be billed if damaged or lost.

Putting compartmentalized waste/recycle containers in each classroom could work if we ran an education campaign to change people's behaviors. It would cost a lot for the recycling center to maintain the new system. There would need to be a night crew

to come in with housekeeping and pick up all the recyclables. Of course the containers themselves would cost a lot in the short term. But the extra items being recycled also means more income.

We conducted an audit of the classroom waste in one hallway of Wescoe, followed by a test of the students to find out how much more would be recycled with the addition of recycle bins to classrooms. For one week we collected the trash in fifteen of the classrooms in one hallway, including what was in the trashcan and what was left on the floor. We then separated the trash from what we called "potential recyclables." Out of approximately 88 pounds of materials collected, 66% could have been recycled. The following are the results:

Waste  $\approx$  30 pounds

Newspapers  $\approx$  47 pounds

Bottles  $\approx$  9 pounds

Cans  $\approx$  2 pounds

Assuming that these results are from an average week, we used them as a constant, or base to compare the results from the addition of the recycle bins to the classrooms. The bins we used were from the recycling center on campus, like those used at ballgames. We placed labels on the lids of each bin to show that bottles, cans, and newspapers could be thrown into them. The bins were placed close to the trashcans in most cases and where space would allow. We had an issue in one of the classrooms where the recycle bin was moved into the hallway on four of the days. Either someone thought they were being helpful, or they just didn't want to accept the change. We came up with some interesting results. For the whole week only one page of a newspaper made

it into one of our recycle bins. We think this may be due to the look of the bins. They had round holes in the lids, so people may not have felt comfortable putting newspapers in the bins. There were still plenty of newspapers in the trashcans and on the floors - as many as there were the week before. The other two types of recyclables were in similar quantities as well:

Bottles  $\approx$  11 pounds

Cans  $\approx$  2 pounds

Of these totals, 64% of the bottles and 75% of the cans were recycled. Although our study wasn't perfect, these numbers are encouraging. The frustrating part was the amount of bottles and cans in the trashcans when the recycle bins were in such close proximity - they were touching. But this happens for the same reason bottles and newspapers are left all over the classroom floor, on desks, on windowsills. No one is held accountable, so they remain apathetic about the consequences of their actions. Even with the majority of people recycling, there remains much room for improvement. Twenty-five to thirty percent not recycled adds up to a lot of unnecessary waste if that is the trend across campus.

One way to get campus-wide involvement with the waste reduction and recycling effort is RecycleMania. Created by students at Ohio University and Miami University, RecycleMania is a competition among college and university campus recycling programs to foster good waste reduction and recycling habits that participants will hopefully carry with them when they leave campus. The participating campus can choose which specific competitions to get involved in such as waste minimization or total recycled materials. The amount of recyclable and organic materials collected during this year's competition

prevented the release of an amount of carbon equivalent to that produced by the consumption of 6.5 million gallons of gasoline. (RecycleMania)

Another step towards awareness would be a tip of the week or month delivered either by mass email or printed in the University Daily Kansan. For those who are too busy to check out the Environmental Stewardship website, we could bring the ideas to them. It could be as simple as how much savings one gets by using a reusable mug, or how to recycle your old cell phone. Even a specific one for faculty might be good for things like how to make handouts, homework, and lecture notes available on Blackboard to reduce the number of copies they make.

It is important to look at all aspects of waste reduction and recycling in order to help our campus develop a sustainable system. Along with improving our recycling program there are many other ways that the University of Kansas can reduce the amount of waste it produces that have not been considered. Outlined below are a few ideas that would help KU reduce its waste and a brief outline on how to implement some of these ideas.

One of the most used resources that this campus has to offer its students is access to computers. Along with this comes printing services, which provides each student with eight dollars worth of printing, where each page printed costs eight cents, which is 100 pages per student per semester. With 25,106 students printing 100 pages there are about 2,510,600 pieces of paper printed a semester. Currently there are bins in all of the computer labs encouraging students to recycle the paper they are not going to use, but how can we prevent this waste from even being created? It is more important to be

proactive in waste reduction rather than reactive, which is how most students act in this situation.

One of the first ideas to reduce the paper waste would be to provide double sided printing in all of the computer labs. After speaking with a representative from the computer labs, Thomas Roderick, we found that in order to offer the option to print on both sides of the paper it would require a \$300 dollar part installed in all printers on campus and also the reformatting off all CSprinter programs to accommodate the new option. Double sided printing is possible if performed manually, but this is not often used because it is unknown by many students and is time consuming. More education of students on this option would be required, or a push from students to administrators to get the money to retrofit the printers with the required part.

Another method to reduce the amount of waste produced in computer labs would be to educate the students on ways to reduce the amount of paper they use. Currently there is information available on large posters next to the printers that inform students of methods they could use to reduce their paper use. These tips were taken from the University of Kansas Recycling center website. Our suggestion to Mr. Roderick was that these tips be added to the main screen of all the computers on campus, so students will see the tips before they print, not after, which is the case right now. Mr. Roderick was very welcoming of this idea, but after deliberation with his peers he found that there were concerns with the idea. Many believe that students do not even look at the main screen and also that any more information added to the screen would make the print smaller and difficult to read. So the idea was suggested by Mr. Roderick that he add the tips and a

link to the recycling centers website to the main page of the computer labs website. He is also going to get in touch with the libraries to have them add the information as well.

The last concern we had with the computer labs dealt with the actual equipment. All old electronic equipment is gathered through KU Recycling. Equipment that is still working is redistributed as needed. Other nonfunctioning equipment is gathered through KU Recycling and taken to the Kansas Computer Recycling Center and recycled appropriately.

Next on our list of waste reduction was the University of Kansas Dining Services. In order to get overall ideas of the way dining services functions we spoke with Nona Golledge, director of KU Dining Services. Nona was very helpful in providing information on current waste reduction practices in the dining halls and on campus cafeterias. Currently dining services uses a CBoard, which keeps track of menus that have been used in the past. It also keeps track of how much was actually used, so staff can estimate how much food and supplies will be needed each time that menu is served. Dining services has also agreed to work with Ilya Tabakh and The Alternative Energy Society, to turn used fryer grease into biodiesel fuel for use on campus lawn equipment. A few small things that are also in practice include the use of 100% recycled sleeves for hot beverages and recyclable napkins. Also, in dormitory dining halls reusable plates, bowls and utensils are used instead of disposable ones. The manager of the Underground is very interested in improving their recycling and has asked KU Recycling Services for a few bins that can be placed in food preparation areas. His main focus was to reduce the amount of plastic that was being thrown away. These are the activities are the extent of the waste reduction and recycling practices by our campus dining services.

After discussion with our group, we developed a few ideas that would help our dining services become more sustainable in waste reduction and recycling. One idea was to sell reusable mugs and cups in the unions and the Underground and advertise the savings from the reusable cup. This would give the consumer the option to reduce their own waste and also provide them the opportunity to save money with refills. Nona illustrated some concern with this idea because they usually end up with extra cups that do not get sold. There are also health code issues that surface with this idea because of mouth to cup, cup to dispenser contact. We next wanted to see how possible it would be to replace the disposable plates, bowls and utensils with biodegradable ones. After some research on bulk prices we found that the acquisition of biodegradable utensils is only slightly more expensive than the utensils that are currently supplied. Some utensils such as forks, spoons and knives would only require the investment of two cents per item, but items such as plates would be a three cent increase. A solution to this would be to gain student support and increase the allocation of money to obtain biodegradable utensils. This usually involves an increase in student fees though.

Our most time consuming idea involved implementing a composting program on campus. In the past Resource Conservation and Recycling developed a Composting Pilot program that successfully collected food waste from two scholarship halls, Grace Pearson and Douthart Hall. This program was shut down because it lost its composting site to construction on west campus. In order to implement a composting program again we would need cooperation between KU recycling, Facilities Operations and a few scholarship halls. Finding a location on west campus would be easy, since Facilities Operations already composts yard waste that is collected. We would need to educate a

couple of willing scholarship halls, on the proper composting components. Then an entity, such as KU Recycling would have to transport and properly dispose of and care for the compost pile. It is important to start on a small scale at first, to determine the feasibility of the program in general. If the system works well, it would be beneficial to expand to other halls or dormitories and maybe eventually the unions and the Underground. In order to do this though there would have to be large scale education and proper training of new employees. One example of a properly functioning large composting program is in Free State Brewery. They currently separate and collect food waste, pre and post consumer, and it is taken to a composting facility outside of town. Since the KU composting would be on campus, it would not only reduce waste production, but it would also benefit landscaping. They would be able to use the compost to fertilize campus flower beds and other areas it was needed. Though it is a larger project to implement, composting has been done on the KU campus and it would not be difficult to implement once again.

Previously mentioned were the actions that our campus is currently practicing to reduce waste and promote recycling and actions of other college campuses that promote the reduction of their waste. We have developed some ideas that would benefit our campus and facilitate in the sustainability of waste reduction and recycling on the University of Kansas campus. We have identified some types of behaviors that are apparent in our society and how we can attempt to change those behaviors. In order to implement this project and any other project along these lines is important to educate and inform student's faculty and staff of the importance of the attempted changes and how they can assist in accomplishing these changes.

The most important fact that we found through this project, is that everyone we spoke with is willing to help and change their actions. Many of these people have to power to enforce changes, but do not know how to go about making the proper changes and who to work with. In order to accomplish any of the ideas listed above, there would have to be large scale changes in infrastructure of departments such as, dining services, Facilities Operations, Housekeeping and KU Recycling. If there were one entity to organize with and for all of these departments to collaborate with, many things could be accomplished.

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