

Wasting Away

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Abstract

The United States' waste stream is the most visible example of popular society's disregard for the earth. The environmental movement focused on curbing the array of crises we now face has been steadily growing since the 70's, however; the extent of its progress in many areas is questionable. Specific to mitigating the amount of garbage that plagues our communities and landfills, recycling programs have cropped up nationally and internationally. The success of these programs is arguable and while Smith's program has become more efficient in the last twenty years, the sense that further improvement could be made led to an investigation that sought to quantify its waste stream. In collaboration with Bob Dombkowski and other members within Smith's Grounds and Physical Plant Departments, samples of garbage were taken from 10% of Smith's dumpsters. Each sample was weighed and then separated into specific groups that fit into the larger categories of goods that were either: recyclable/compostable/reusable/hazardous waste/trash. Once sorted the samples were re-weighed. Percentages were calculated using the new weights against the initial net weight of a sample; these percentages exemplified the "true" weight of the sample. The results of each sample revealed that at least 50% of the "garbage" in each trial *wasn't* trash and could be diverted away from the landfill. While Smith does make strides to keep recyclable materials from entering the waste stream, it was clear from much of the sorting that was done that Smiths' ideology toward trash parallel that of greater society's, assuming trash to be an unavoidable byproduct of life.

Introduction

As a species dependent on certain inputs for survival, such as food and shelter, the production of a certain amount of outputs as a result is unavoidable. However, this rate of production entered into an age of unprecedented growth as subsistence started to move away from the home and into the mechanized market place during the industrial revolution (Gardner and Sampat, 1998 pg 9). People were becoming less reliant on themselves and their ability to work with the land for survival, instead the market could provide for all of their needs, some of which they never even knew they had. Although it wouldn't be until the period of prosperity that followed World War II, that consumerism

would really begin to surge within the United States (Tammemagi 1999, 25). Improvements in production practices in collaboration with the strategic marketing of goods led by the institution of a highly effective advertising industry played key roles as Tammemagi (1999, 25) put it, in the transition of United States' culture from one of subsistence to one of "overconsumption".

As the number of items being consumed increased so increased the levels of waste proportionally. Worse yet an entire industry devoted to the packaging of these items was established at this time, packaging, whose entire purpose in life is up once the commodity was in the arms of the consumer. Some surveys have estimated packaging to make up more than one-third of the entire waste stream (Tammemagi 1999, 25).

The increasingly levels of waste within the United States were unfortunately not the only problem with regard to garbage at this time. This period also brought about the development of the chemical age. As synthetic chemicals began to proliferate in the products being mass produced and mass consumed, the level of toxicity in waste grew concurrently (Tammemagi 1999, 25).

The environment as people knew it was beginning to change dramatically, under attack by an extraordinary amount of waste and toxins. The alterations taking place were and continue to be largely ignored. Unfortunately, our consumptive habits are no longer just effecting the environment within our own country, but have for decades now been polluting and exploiting the lands of people internationally. Making up little more than 7% of the world's population, the United States greedily uses up more than one third of the world's resources (Gardner and Sampat, 1998 pg6).

Just as industrialization has worked to disconnect people from the resources that are needed to make the products (or variations thereof) they use to make for themselves, the subsidized waste disposal infrastructure has effectively disconnected people from their trash. Space is at a premium today especially when it comes to sites for disposal, few being thrilled about the prospect of having a landfill in their back yard. In the process of overwhelming the earth with waste and toxins we have been responsible for the loss of 50% of its wetlands, 85% of its old-growth forests, and 99% of its tall grass prairies (New Road Map Foundation, 1998). The effects have not been insignificant.

In David Orr's book *The Nature of Design*, he emphasizes the unique and fundamental role institutions of higher education have in promoting the concepts behind sustainability (2002). According to Orr said institutions are currently highly underutilized with regard to the amount of potential influence they can have. Teaching is traditionally thought to take place within the classroom, and the information and knowledge being taught is thought to come from books and professors.

Obviously our eyes, ears and most importantly our minds don't shut when we walk out of the classroom. We don't stop absorbing information when we close our books or are out of the presence of our professors. On the contrary we continue to take in everything around us and interpret it to have some sort of meaning in relation to us and the world as we understand it. With this in mind it is vital to critically examine how a "liberally minded" institution such as Smith portrays itself outside of the classroom. The challenging discourse held within classes will be regarded with limited trust when the moral principles behind the arguments aren't exhibited outside of the classroom.

It is this potential gap in Smith's institutional pedagogy that brought me to question the effectiveness of Smith's system of waste management. While a method of integrated waste management has been put in place as a means of diverting certain materials away from the landfill, a systematic examination of Smith's waste stream sought to reveal the efficacy and sincerity of Smith's program. Once the results were gathered, interpretations of the findings would lead to recommendations for improvements if there were any to be had.

Methodology

The methodology used in this examination was modeled after a system used by Sky Valley Associates, an organization based out of the Northwest. Their primary work consists of sampling the waste streams of municipalities as a means of providing cities with data that will help put more efficient waste management policies into effect. The sampling scheme Sky Valley implements are done on a much larger scale at dumps and transfer stations. While my examination took place at Smith and on a much smaller scale, the processes of surveying were paralleled.

After speaking with Bob Dombkowski, Head of Grounds, several times, I was able to obtain a map which plotted out all of the dumpsters around campus. There are 51 in total, including two at Fort Hill. The survey sampled approximately 10% (or 5) of the dumpsters around campus. The aim was to acquire a sample between 30-50lbs from each site. Because I was unable to transport the scale I had access to with me to each dumpster, picking the sample consisted of grabbing the three largest bags I could. The methodology behind the sampling plan sought to represent the diversity of Smith's waste stream by taking portions of garbage from residences, academic buildings, physical plant

operations and Smith's commercial renters. Unfortunately, the pick up schedules for the dumpsters around campus are irregular and unpredictable.

With the help of an electric cart lent to me by Bob Dombkowski samples were collected from Haven House, Wilder House, the Bookstore/Post Office, Tyler House and the Indoor Track and Tennis Facilities (ITT). After each individual sample was collected it was initially weighed (Table 1), using the compost scale located at King House.

Table 1:

Site	Total Net Weight
Haven	58.5 lbs
Wilder	40.5 lbs
Bookstore	29 lbs
Tyler	43 lbs
ITT	57 lbs

Once, the initial net weight of each sample was recorded, the sorting groups were specified. Both Bob Dombkowski and Angie Fowler, Recycling Coordinator for the Four Colleges, were consulted to determine the categories. Not all integrated waste management systems are the same. Depending upon location materials deemed retrievable from the waste stream can vary. Unfortunately, the process of recycling is dependent upon markets for the materials to go to, to then be *re-cycled* into a new commodity.

While there has been some ambiguity with regard to which materials Smith participates in recycling, the list as follows were all categories I included in my sort:

Figure 1

Paper:

All office paper- white and colors
posters, index cards, post-it-notes
notebook paper (no covers, remove plastic bindings)
magazines, catalogs
newspaper and inserts (check for CDs)
envelopes with or without windows (watch out for Tyvex, this is plastic not a paper envelope)
NO PIZZA BOXES
NO TISSUES, PAPER TOWELS, PAPER CUPS, PLATES
NO CONTAMINATED (dirty, laminated, too much tape, or any duct tape) OR WET PAPER

Cardboard:

corrugated cardboard
gray cardboard (cereal boxes)
brown paper bags
NO WAXED CARDBOARD
NO 6-24 PACKS MATERIAL
NO WET OR CONTAMINATED CARDBOARD

Bottles & Cans:

All glass, aluminum, tin/steel, or plastic, bottles and cans (caps and lids are trash)
milk and juice cartons
juice boxes, soy milk boxes
yogurt and deli containers
aluminum trays
Any plastic container numbered #1-7 (but not styrofoam)
laundry detergent, shampoo, lotion bottles
All containers must be empty and rinsed clean to remove food or liquids (a few drops of water, soda, juice are ok).
NO PLASTIC BAGS
NO PLASTIC CUPS, PLATES ETC.
NO MOTOR OIL BOTTLES
NO CONTAMINATED BOTTLES & CANS (food, oil, liquids)
NO PACKAGING MATERIALS (peanuts, blocks, bubble wrap, bags, misc. wrapping, tyvex envelopes)

Sky Valley Associates' sorting method requires them to separate out all of the different types of paper from one another, all of the different types of plastic from one another, etc. This is similar to the sorting one may have to do if he/she brought his/her recyclables to a recycling center. However, because Smith has a system of collection that doesn't require us one to so thoroughly separate all materials, the categories of this survey were more general.

There were nine possibilities of categories an item in the “trash” could be sorted into:

Figure 2

Trash	Paper
Compost	Plastic
Cardboard	Donatables
Glass/Cans	Metal
Hazardous	

While plastic and metal are collected altogether along with the glass and cans at Smith I thought it important to separate out these two as a means of seeing how big their populations are with Smith’s waste stream. Though the percentage of recyclable objects in the waste stream were of great interest in this investigation, percentages for any and all items that could be diverted were equally as important. It is for this reason that the categories of *compost*, *donatables*, and *hazardous* were added to the list.

Disparities with regard to the “recyclability” of certain materials led me to make firm, yet potentially incorrect decisions when it came to sorting. For example, while Figure 1, states that “gray cardboard” (cereal boxes) is recyclable we are discouraged from recycling it at Smith. In my idealism I counted all gray board as recyclable. Another discrepancy came under the “plastics” category. Under “bottles and cans” it says that any plastic container with the number 1-7 is recyclable, yet then it goes on to say that plastic cups are not recyclable. However, any plastic cup I came along that was numbered 1-7 I considered recyclable. Debates with regard to what is and what is not compostable generally ensue around the question of meat. I assumed it was compostable. Lastly, just to clarify the “hazardous” category, it was made up of a handful of batteries.

While these are not the only items Smith recycles, (i.e. they also recycle books, mattresses, large quantities of porcelain, tire, carpet, toner cartridges, asphalt, etc.) these were the categories that applied to the types of waste encountered in this study.

Another important aspect of this examination lies in the costs Smith pays to dispose of its waste. While prices fluctuate throughout the year, depending on how overwhelmed the Northampton landfill may be, Bob Dombkowski gave figures for what are typical dumping fees. On average 4 tons of garbage leave Smith campus and are brought to the Northampton Landfill each day. For dumping regular garbage the tipping fee per ton is generally around \$75. The price jumps up about \$20 per ton for the dumping of construction demolition waste. Given the weekly average haul of 4 tons, \$300 a week is spent to get rid of just our regular garbage, construction demolition (which all the projects around campus are producing an immense amount of debris) aside. In the spring time, as Smith's student population flees for the summer or for good, this amount surges to 8 tons and in the summer when few are around the weekly average is two tons.

Results

In each of the five samples, once sorted into their respectable categories, the true weight of trash represented 50% of the sample *at most* (refer to Charts 1-6). Upon averaging the five samples true trash only came to represent 35% of the average waste stream (refer Chart 6). This means that in every case at least half of the materials thrown away could have been somehow diverted away from the landfill. Compost averaged out to be the second highest portion of the waste stream throughout the five samples at 25%; with paper following at 14% (refer Table 6). Prior to sorting I may have guessed that paper would have made up the second highest percentage, however it is important to note that this examination of Smith's waste stream used weight as the sole indicator to

differentiate between the presences of the differing materials. While weight is a key factor especially when it comes to tonnages and tipping fees, many materials aren't very heavy, yet take up an enormous amount of room.

It was disheartening to see the expanse of recyclable, compostable and reusable materials ending up in Smith's waste stream, but perhaps what was even more discouraging was what seemed to be the absence of anything stressing the importance of waste reduction itself. The sample taken from ITT demonstrated this point most plainly. The sample was the remnants of the annual end of the year athletic banquet. The whole ceremony appeared to have been a disposable one. Paper plates, paper napkins, paper programs, plastic cups, plastic silver wear and heaps of wasted food. It was a clear example of the excess Smith College and the members within its community are privileged enough to perpetuate without a second thought. You'll notice by examining Table 2 and 3 that the samples taken from ITT are hardly even made up of any materials that could be recycled or reused, compost on the other represented the highest percentage of any of the samples at 42% (refer to chart 5).

While there were slight shifts in percentages between all of the samples, all exemplify the same findings, half of our trash isn't trash.

Chart 1

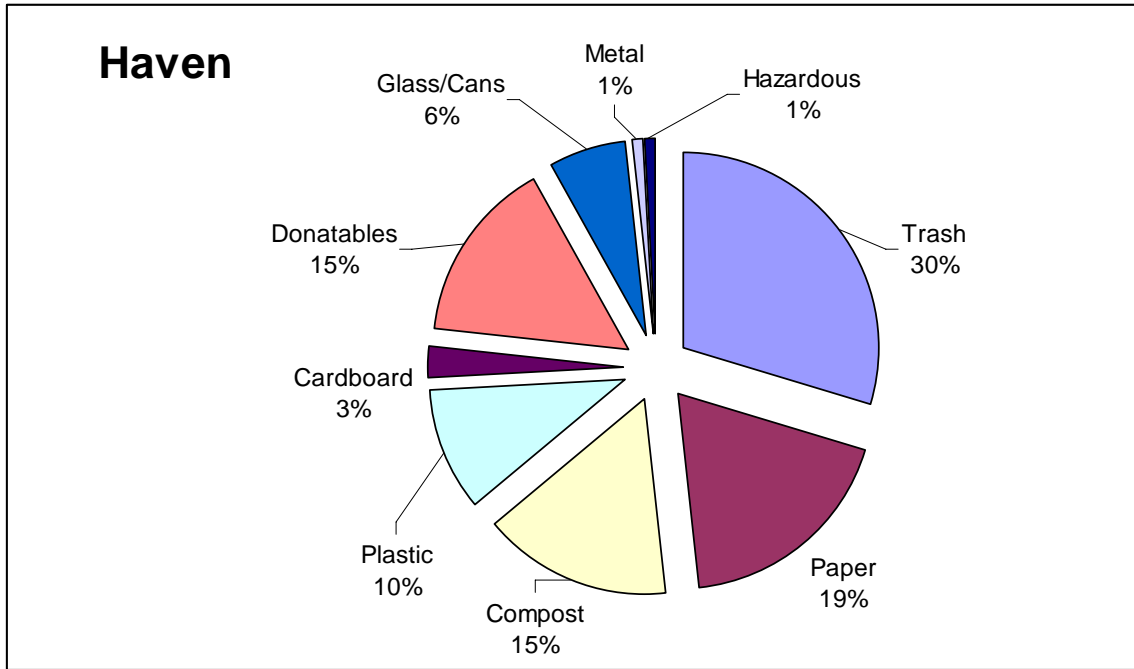


Chart 2

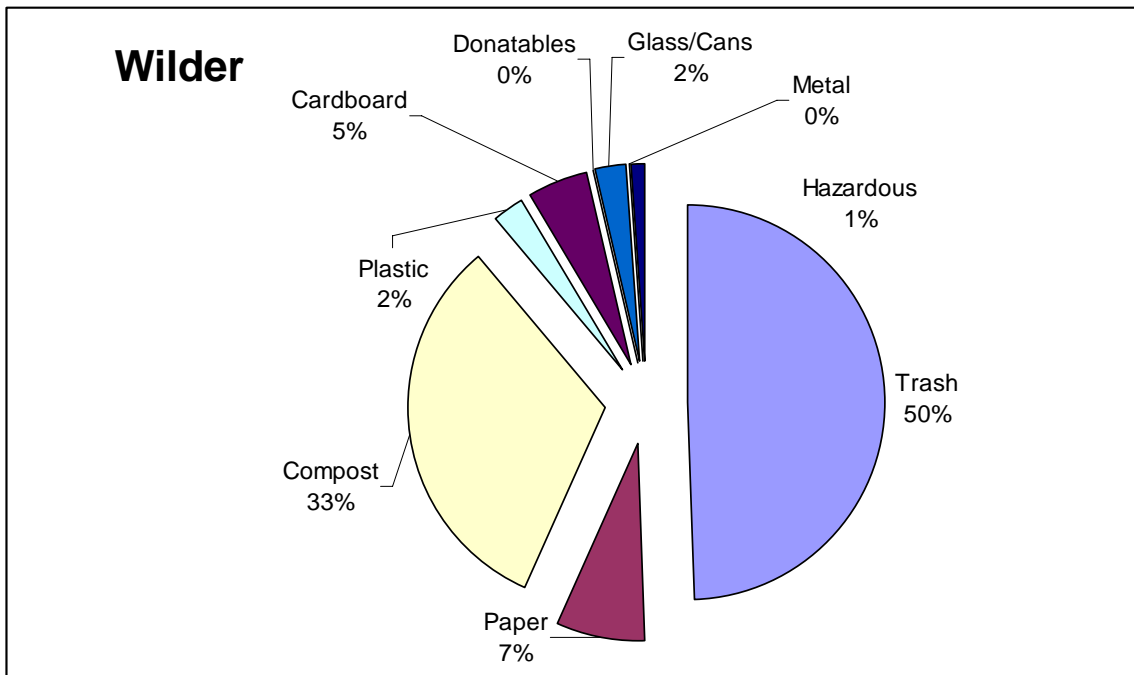


Chart 3

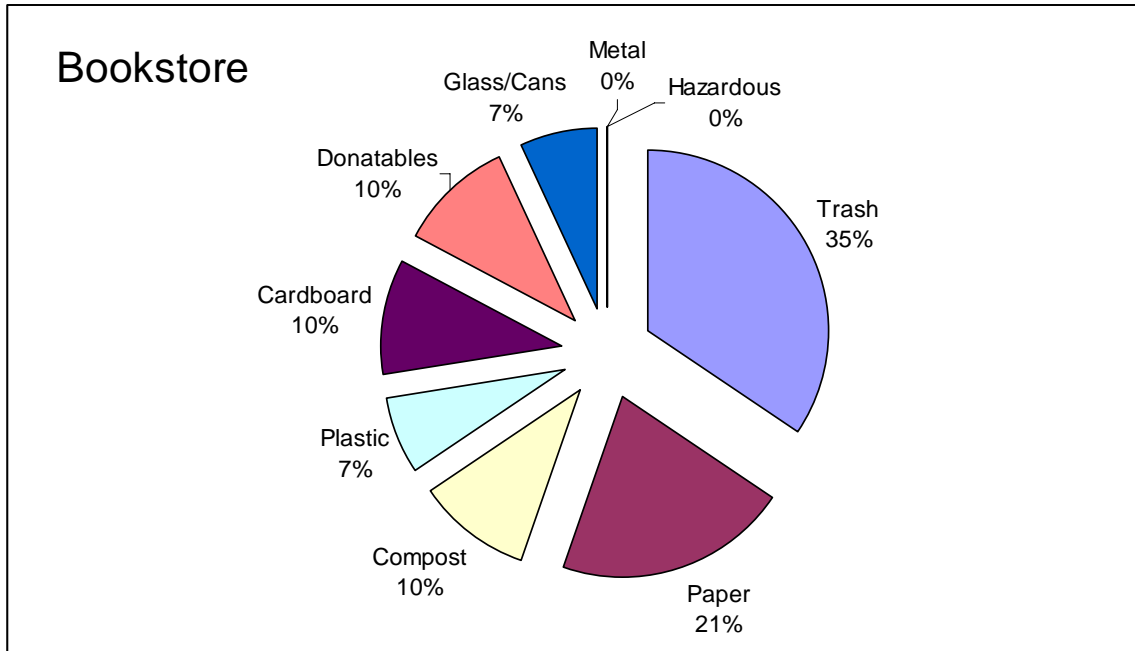


Chart 4

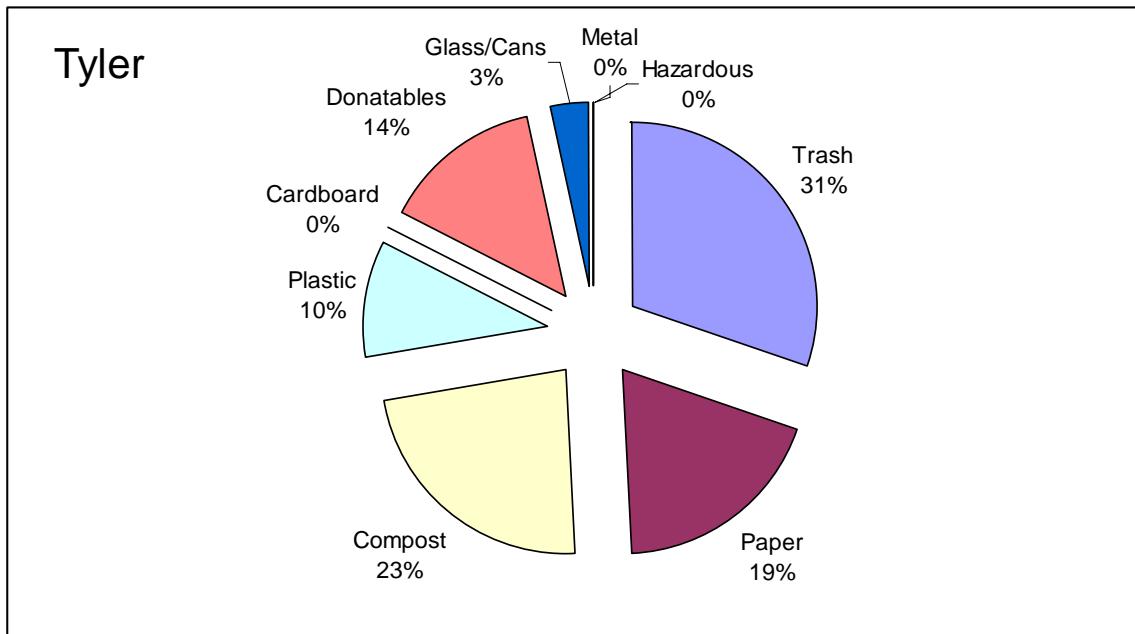


Chart 5

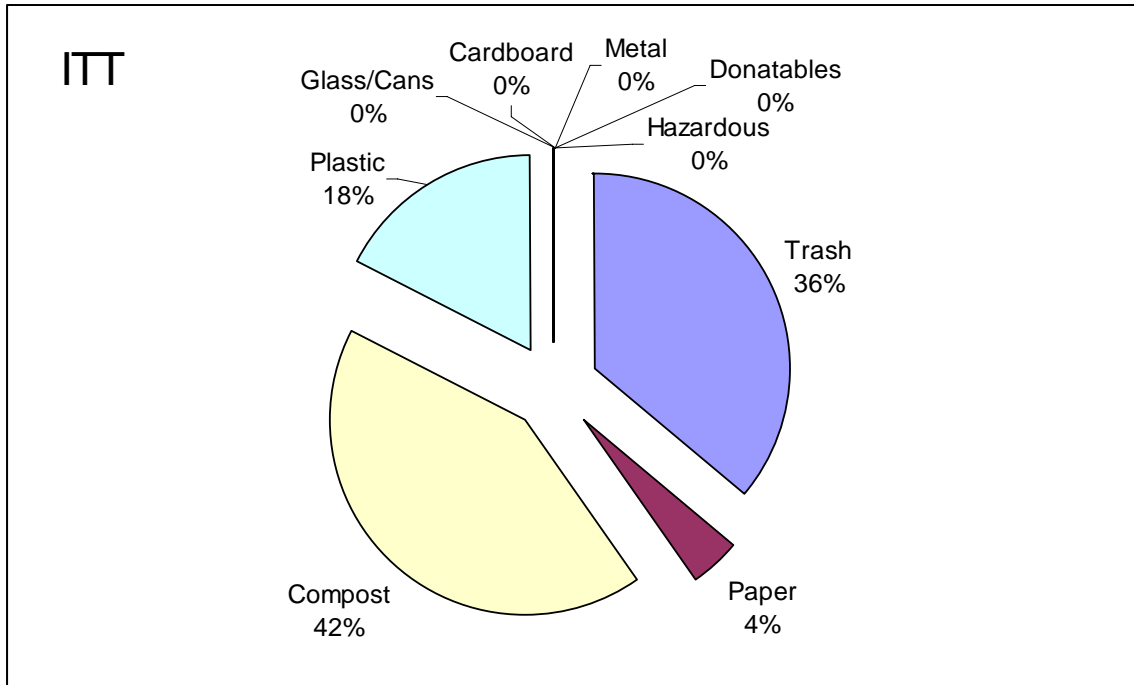
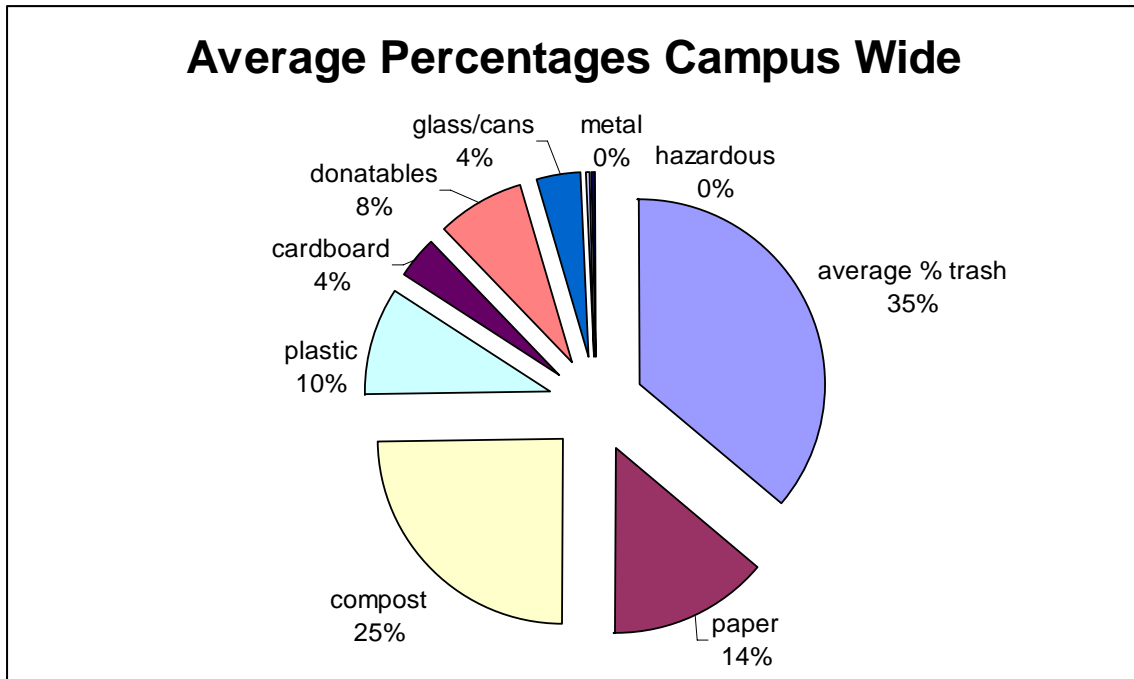


Chart 6



Discussion and Recommendations

Having just calculated that an average of \$300 a week is spent on the disposal of Smith's garbage, and having just concluded that Smith's waste stream could be halved if materials were properly discarded, monetarily speaking alone, Smith could save \$150 a week by implementing more effective waste management policies.

Reducing resource consumption, especially needless waste would save Smith a great deal of money. While money should never be the primary motivation for the implementation of more socially and environmentally responsible policies, it can be used to sway hesitant support, especially now in times of budget strains.

More importantly however, is the image Smith tries to endorse, which is one of a liberal arts college with a social conscience. It is supposedly preparing the leaders of tomorrow, yet as a graduating senior what am I really prepared for? In a time of such urgency nationally and internationally, environmentally, economically, socially and politically, what sort of change are we prepared to make?

This project isn't about how much or how little people at Smith throw away. It isn't about much or how little gets recycled. It is about excessiveness and over consumption. It is about misplaced values and upside down priorities. It is about capitalism and media's manipulation of our inherent wants and needs. It is about addiction to the world of commodities and about broken relationships and broken homes. It was about how much people are paying attention. It is about how little people are paying attention. It is about responsibility to each other, and to the earth.

Of course Smith could benefit from the institution of more conveniently placed recycling bins around campus. Of course having earth representatives in charge of the

recycling would increase the effectiveness of Smith's waste management program. But until Smith decides to incorporate the ideas of sustainability and equity into the foundation of the institution progress will be unaccountable. These ideal have to pervade in every region of the community. Fundraising money cannot be taken from companies invested in the war, such as Brown and Root, sponsor of the Brown Fine Arts Center. Chemicals, such as pesticides, cannot be used around campus to uphold an "image" while compromising our health. High school applicants cannot be discriminated on the basis of their financial need. Professors cannot be made to feel afraid of speaking out against the ills of our system.

We need to be encouraged to enjoy ourselves, each other and our environment. We need to be expected to be better people and with the understanding that more money doesn't make us better. We need to be encouraged to think and to challenge and to hope and to love. We need to be taught to fight for justice until there is none left to fight for.

These are my recommendations for change, for improvement.

Bibliography

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