

Business Waste Characterization Report

Portland Community College – Sylvania Campus

Waste Evaluator: Ronda Chapman

Date: March 2, 2007

Hauler: Waste Management

Waste Sort Conducted By:

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Methodology:

Serving approximately 25,000 students, Sylvania is PCC’s largest campus. On March 2, 2007, Sylvania students and staff took a 300.75 pound random sample (Figure 1) of waste from six dumpsters located throughout the Sylvania campus. A representative sample of roughly 10% of each dumpster’s contents was removed and taken to a loading dock for analysis. The materials were sorted into four general categories and fifteen sub-categories (Appendix A). These material groups were then weighed and cataloged. The resultant findings and recommendations follow¹.



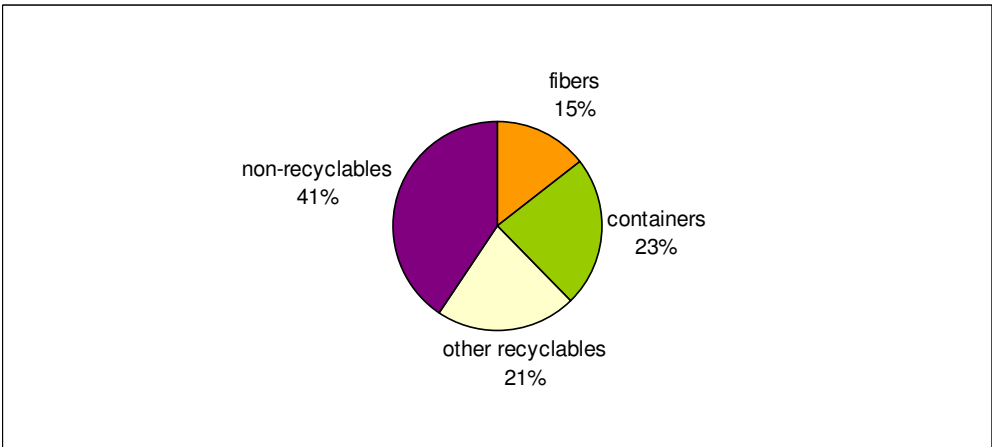
Figure 1. Waste Sort Participants

Findings:

The four general categories of materials were:

- Recyclable Fibers (newspaper, corrugated cardboard, mixed paper)
- Recyclable Containers (aluminum/steel/tin, plastic, glass, aseptics, and plastic bags/film),
- Other Recyclables (scrap metal, electronic waste, wood, and compostable fibers/food),
- Non-recyclables (garbage: bathroom litter, disposable coffee containers, disposable food containers).

Figure 2 shows the percent by weight of each of these four categories. By looking at the materials this way it is easy to identify the portion of the waste stream that may be recyclable.



¹ Note: Both the findings and recommendations are cited in terms of weight, not volume. The weight of a material is not always representative of the material’s volume. Weight data may also be skewed by liquid contamination within the sample. These circumstances are noted where they are relevant to the findings

Thirty-one percent of dumpster contents is easily-recyclable beverage containers and paper/cardboard. An additional 32 percent could be avoided with improvements in Sylvania’s recycling program. Altogether, waste could be readily reduced by 63 percent.

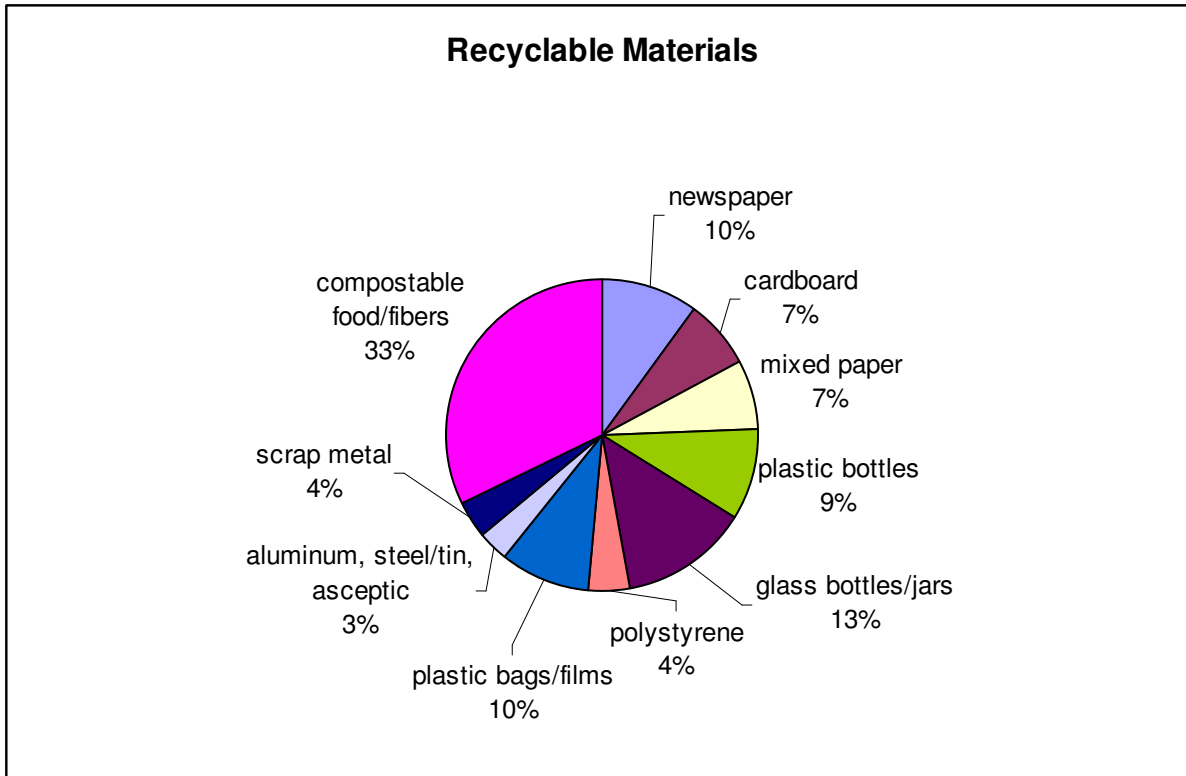


Figure 3 provides a detailed breakdown of the recyclable materials found in the waste stream.



Figure 4: Compostables



Figure 5. Polystyrene



Figure 6. Glass

Compostable materials (Figure 4) was the largest waste category by weight. These materials make up the “wet waste,” which is expensive to haul and dispose at the transfer station. Six pounds of recyclable polystyrene from the cafeteria was collected. Glass bottles made up 13% of the sample. A 41-pound printer was originally included in the sample, but was removed from aggregate data because this is not typically representative of PCC Sylvania’s trash.



Figure 7. Electronic Waste

The non-recyclable category comprised only 37%, or, 105 pounds of the total 260 pounds assessed. It is worth noting that 30 pounds of the sample was non-recyclable containers. These containers were food and beverage containers, which indicates the opportunity to institute campus-wide changes to decrease these particular materials. **Figures 9 and 10** illustrate these findings.



Figure 9: Plastic Containers



Figure 10: Disposable Coffee Cups

The following is a list of the total weight and percentage that each of the four categories contributed.

Table 1. Total composition of sample analyzed.

TOTAL COMPOSITION		
RECYCLABLE FIBERS	lbs	%
newspaper	15.5	5%
cardboard	11.3	4%
mixed paper	11.1	4%
RECYCLABLE CONTAINERS		
plastic bottles	14.6	5%
glass bottles/jars	20.5	7%
polystyrene	6.3	2%
plastic bags/films	14.7	5%
aluminum, steel/tin, aseptic	4.6	2%
OTHER RECYCLABLES		
scrap metal	5.9	2%
compostable food/fibers	49.9	17%
electronic waste ²	40.5	13%
NON-RECYCLABLES		
non-recyclable containers	29.8	10%
other	76.05	25%

² The electronic waste in this case was one piece of equipment. However, it demonstrates the need to educate staff on opportunities to divert electronic waste from the waste stream and to a recycling system.

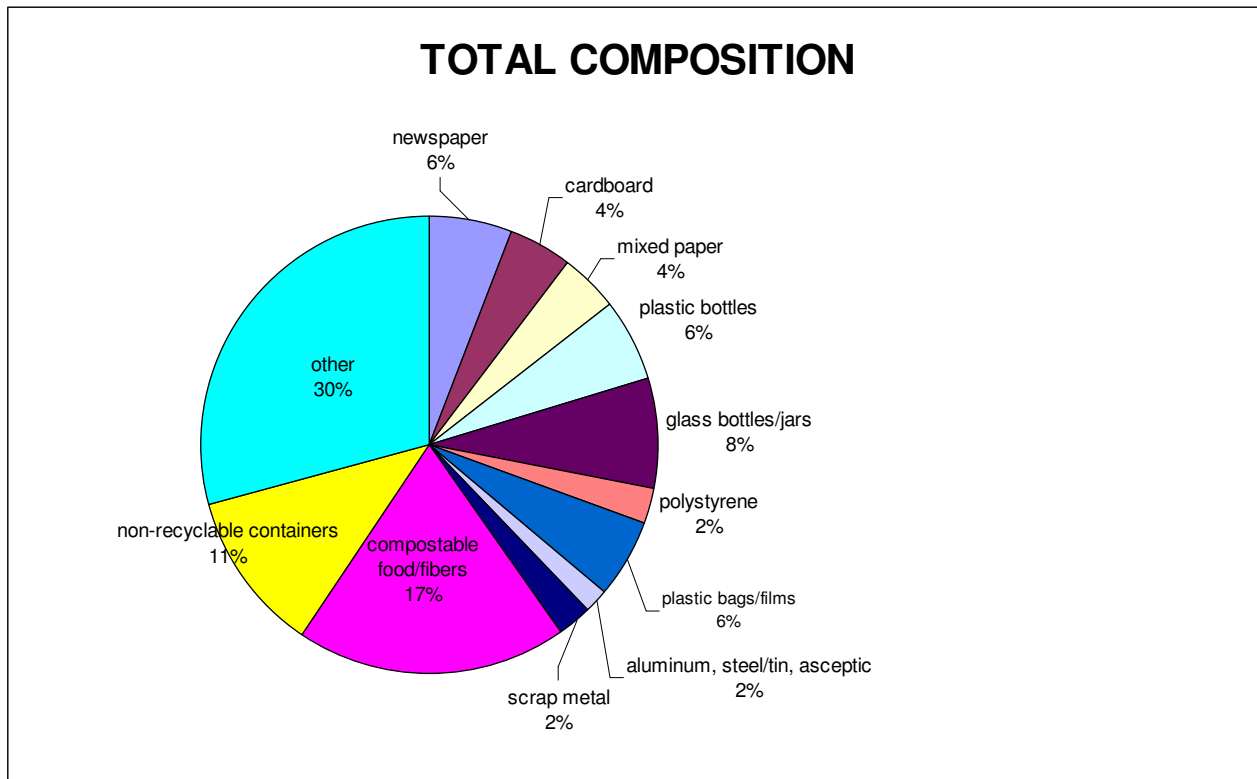


Figure 11. Total Composition of sample analyzed.

RECOMMENDATIONS

Based on the evaluation, the waste evaluator makes the following recommendations to increase recycling rates and reduce waste for the PCC-Sylvania campus.

- Increase the number of uniform recycling containers and signage throughout the campus. Although there is currently a recycling system in place, the amount of recyclable materials found in the garbage indicates the need to increase opportunities for staff, students, and campus visitors to engage in the practice.
- Educate students and staff on the need to decrease usage of disposable beverage containers. The coffee vendors on campus already make it a policy to provide a discount for those who use durable coffee containers. It is a valuable message to get across through various means of communication: campus campaigns, raffles, achievement awards, school newspaper, etc. Including durable water containers as part of the campaign is also worth while. The number of plastic water bottles was significant for that category as well.
- Consider instituting a compost program. There are now more opportunities available to support composting efforts and many college campuses throughout the nation are becoming involved. The amount of compostable food and fibers was significant, as was the amount of disposable food containers. Implementing a compost program could address both of these issues by including the use of biodegradable food containers, eliminating the need for separation of food containers and food. It is recognized that this action may be a costly one in its beginning stage, however, the long term effects make it worth investigating.

- Institute an electronic waste collection area or room. It is very common for institutions to upgrade their technological equipment as the need presents itself, however the proper disposal of unwanted equipment is vital.
- Reduce size and frequency of garbage bag usage. There were several very large, nearly empty plastic bags found in the sort. The fact that plastic film constituted only five percent of the waste stream is misleading due to the percentage being based on *weight not volume*. This is an education effort that needs to be communicated with the janitorial staff and facilities.
- Consider working closely with your garbage hauler. The campus is very large and your garbage hauler may be able to provide you with monthly or quarterly waste reports. These reports could provide you with recycling weights, garbage weights, and a break down of materials collected. Such a report would allow PCC to monitor the campus' behavior and provide insight on ways to improve and cut costs.

Appendix A: Glossary of Sort Categories

Aluminum/tin/steel cans: Containers made of aluminum, tin and steel including containers for beverages and other materials.

Compostables: Any materials such as food, food-soiled paper, or yard trimmings. This also includes waxed cardboard boxes, drink cups, and coffee grounds.

Corrugated cardboard (OCC): Corrugated boxes used for shipping and packaging materials.

Electronic Waste: Computers, computer equipment, fax machines, and most other technological equipment common in offices and schools.

Glass bottles/jars: Containers made of glass exhibiting a neck or threaded top. This category excludes light bulbs, flat glass, and drinking glasses.

Mixed paper: Office paper, paper board/soft cardboard, folders, scrap paper, sticky notes, shredded paper, paper bags, and all other non-corrugated cardboard.

Newspapers: Any materials printed on newsprint type paper.

Non-recyclable containers: Included containers not made of metal or glass or plastic. Examples include coffee cups, carry out food containers, water and soda cups. These materials are known as “true waste” because there are currently no recycling options for these materials.

Other non-recyclable materials: All other non-container materials that can not be recycled including non-compostable food waste, plastic utensils, bathroom paper towels, ballasts, and plastic trays. These materials are also known as “true waste” because there are currently no recycling options for these materials.

Plastic bags/film: All bags including grocery, trash, and sandwich bags. Also includes shrink wrap, plastic pallet wrap, and bubble wrap.

Plastic bottles: Plastic containers with a neck, including containers for beverages and other fluids.