**Blaine School Lunch Waste Audit**

The Blaine School Green Team wanted to find out how much waste the school was generating during its lunch period to determine if recycling or composting the waste might be an option for the school. The cafeteria serves breakfast, lunch and an afternoon snack for pre-k to 8th grade students. The majority of students bring their lunch to school, which is where the bulk of the waste is being generated. We decided that a waste audit was necessary to determine the types and amounts of waste the school/students were generating in the cafeteria to make meaningful decisions. Our audit was to be performed during the lunch period only.

Before beginning the project, the cafeteria places almost all (98.5%) of the waste generated into black garbage bags and is thrown into a dumpster destined for the landfill. The cafeteria food preparation area does separate and recycle any plastic, aluminum and glass generated (1.5% of daily waste). Although recycling of paper, plastic and aluminum is performed in the rest of the school, none of the waste generated in the cafeteria by the students is being recycled. Moreover, neither the cafeteria food preparation area food waste, nor the student food waste is separated for composting.

The Team randomly chose the week of March 19-23, 2012 to perform the audit. To reduce the possibility of skewing any behavior or results, the students and parents were not informed of the audit. The Team members consisted of Sandra Hamilton, Adam Brent, Jack Thompson, Melissa Glass, Eileen Ryan, Sara Putrim, Liam Robb O’Hagan, Yukari Finley, Nancy Ziegelmueller, Heidi McDermott, Rashmi Ramaswami, and Cara Moroze. We would also like to thank the cafeteria staff- Janet Hartu, Mary O’Connor, Koutonia Norwood, Erica Mayorido, Alfredo Guiterrez, Richard Hoy as well as the Blaine Faculty, Assistant Principal Mr. Weiden and Principal LaRaviere who assisted us on this project.

**Waste Audit**

All waste collection bins were emptied before the lunch period. The cafeteria set up 5 bins with signs above each bin indicating the type of waste to be placed in the bin.

* Bin 1- Food
* Bin 2- Liquid
* Bin 3- Plastic, Aluminum, Glass
* Bin 4- Paper
* Bin 5- Non-recyclable materials

The bins were placed in the middle of the cafeteria where Green Team members were ready to assist the students in separating their waste into the proper bins. At the beginning of each lunch period, Team members went to each table to inform the students of the purpose of the program and how to separate their waste when they were done with their meal. At the end of each lunch period, the students placed their waste in the appropriate bins. When the bags were full, they were weighed and recorded. New bags were put into the bins and process repeated until the lunch period was over.

**Results**

The table below is a summary of the week’s data. Daily totals are included in the attached excel spreadsheet. Cara Moroze also produced photos and short PSA film of the students and team members performing the audit, <http://blainepta.weebly.com/waste-audit-video.html>



The students and cafeteria are generating approximately 230 lbs of waste/day or about 41,436 lbs of waste/ 180 day school year from their lunch period. This number would be higher if the breakfast/afternoon snack and faculty lunch room data were included.

If a cafeteria recycling/composting system were in place, the school could recover 36,612 lbs (89%) of the waste.

* Food – compostable
* Liquid- separated from containers and poured down drain to be recovered at waste water treatment plant
* Paper- recyclable
* Plastic Bottles/Aluminum/Glass –recyclable (only 1 glass bottle collected all week, less than 5 aluminum cans/day collected) Almost all of the plastic was from plastic bottles, bags, packaging and utensils.
* The Garbage/Unknown fraction (11%) consisted of Styrofoam trays, non-recyclable packaging and the occasional misplaced item. The non-recyclable packaging items were mostly juice boxes, milk boxes (composite material boxes, emptied of liquid) and chip/bar packages. If parents and the school could get more involved in reducing, reusing and recycling, this number could be reduced significantly.

The students were genuinely interested in the project. The project helped develop an awareness of the types of waste each student was generating (having to separate the plastic straw from a juice box, paper napkin from their plastic bag containing a plastic straw, fork, spoon, etc). Ms. Gill, the 8th grade science teacher, is also teaching a segment on landfills in her classroom which would further illuminate the U.S. waste problem. The information contained in this audit could also provide the students with an example of the individual responsibility we all share for creating the landfill problems in the U.S. today and also help find some ways that we can all participate in to reduce, reuse and recycle waste material.

**Facts:**

A typical semi tractor truck can hold approximately 50,000 lbs of material. Assuming we could fit the entire year’s waste onto 1 truck (volume plays a role here), the school is generating almost 1 semi truck of un-separated waste/year that is going to the landfill from just the lunchroom. If the school enacted a program to compost and recycle those portions of the waste stream, the material going to the landfill would be about 4,700 lbs, which is a little more than the weight of an average car today, and would fit in the back of most large pickup trucks.

If everything but the garbage/unknown fraction was composted or recycled, the school would reduce its Greenhouse Gas (GHG) Footprint by 18 metric tons (39,683 lbs) of CO2/year. According to the U.S. EPA, the average car produces approximately 11, 450 lbs of CO2/year (<http://www.epa.gov/otaq/consumer/f00013.htm>). Blaine’s lunch recycling and composting program would remove the equivalent of almost 3.5 cars/year from the road.

Although I do not have access to the waste budget for the school, the typical dumpster costs approximately $500 to send to a landfill. Currently, the school is generating a minimum of 1 per/month of waste material from the lunchroom; costing CPS perhaps $4500/year- ? for landfilling waste that is otherwise 89% recoverable.

If the students bring their milk/juice/water from home in re-usable plastic bottles, and used re-usable plastic containers for their food (instead of Ziploc bags), we estimate the school could reduce the plastic/paper/unknown portion by at least 25lbs/day or 2.5 tons/year!

Parents should encourage their children to bring home any uneaten food every day which would provide the parents a direct feedback of what and how much their child is eating. Too often, we were witnessing entire sandwiches, fruits and vegetables that were being discarded. In some other cases, packaged foods like string cheese, apple sauce, yogurts and puddings were thrown away unopened.

One recommendation for the school is regarding the napkin/fork/straw combination package and the Styrofoam tray.

This napkin/fork/straw package is being picked up by the kids typically for only 1 of the items in the package, the rest being thrown away untouched. By the end of the lunch, dozens of these packages were in the trash, and if recycling becomes the normal operation in the cafeteria, the napkin in difficult to separate from the package, which slows the children down when discarding their waste.

The Styrofoam tray is unfortunately non-recyclable, and destined to sit in a landfill for several hundred years before decomposing. Perhaps hard plastic trays/metal trays can be purchased and brought back to the food service provider for cleaning at the end of each day? This could be another cost savings to the school.