
Overview

Garbage on the Green: A Campus Waste Audit

HIGHLIGHTS:

- Approximately 2,200 people attended the event
- Raised \$17,000 in-kind support from the local community
- Received the 2007 Award of Excellence - City of Jacksonville
- University collected baseline data from the waste sort
- The event was fun and engaging!!!

University of North Florida

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Garbage on the Green: A Campus Waste Audit

FOUR THINGS TO CONSIDER BEFORE DOING AN AUDIT:

- **Timing and location of the event**
 - Seasonality and selecting a date
- Endorsements and management support
 - Letters of support
 - In-kind donations and contributions
- Health and safety measures
 - Oversight by EH&S department
 - Training
 - Legal protection: informed consent by volunteers
- Procedures for the waste sort
 - Get equipment and supplies ahead of time
 - Decide on waste/recycling collection areas
 - Predetermine sorting categories

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Best times and days to collect samples for a waste sort

The first rule of thumb states that it is best to collect waste generated during a 24 hour period. This practice ensures that the “highs” and “lows” of daily waste-generation on a college campus will be captured.

The second rule of thumb is to sample on days that come closest to representing the “average day.” For most U.S. college campuses, the “average day” is considered to be Wednesday.

Days to avoid: move-ins, homecoming, holiday parties, spring break, and the end-of-the-semester move-outs can affect the quantity of waste generated, so sampling on these days or shortly thereafter should be avoided if you are looking to audit an average day.

Seasonality does have an effect on waste-generation. Waste sorts could be conducted during the spring, summer and fall semesters to quantify seasonal variations.

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Memorandum (Letter of Support from University President)

January 23, 2007

To: The University's Faculty, Staff and Students
From: John Delaney, President
Re: March 8, 2007 – *Garbage on the Green Event*

As President of the University of North Florida, I want to give my utmost support and enthusiasm to the *Garbage on the Green* event sponsored by the university administration, UNF Environmental Center, Physical Facilities, Housing, the Student Government Association, and the Environmental Health and Safety Department.

Representatives of governmental agencies, businesses, and non-profit organizations are demonstrating their leadership in implementing innovative solid waste management and recycling efforts during the event. The *Garbage on the Green* event will provide opportunities for the university to build a strong foundation with these representatives for the future development of campus recycling operations.

The University of North Florida has had a formal recycling program since the late 1980s. Our program has demonstrated a continued commitment to the State's green initiatives of reducing, reusing and recycling through the recent construction of campus LEED buildings. Further support may include opportunities to integrate more waste reduction practices on campus as the university transitions from a commuter campus to a traditional residential campus of approximately 25,000 students by the year 2020.

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(Letter of In-kind Contribution from Local Vendor)

February 14, 2007

Dear President Delaney,

Native Sun Natural Foods Market would like to take this opportunity to commend University North Florida's (UNF) upcoming "Garbage on the Green" project. This creative environmental education event is an outstanding method to promote sustainability awareness.

As students, faculty, staff and the public join your efforts on March 8, 2007, their awareness will be heightened of UNF's waste management and recycling program. Through your interactive effort, you will be able to address ways to reduce campus trash and promote change in behavior to include reducing, reusing and recycling.

To show support, Native Sun is pleased to provide lunch, beverages and snacks to anyone who attends. Native Sun is proud to support "Garbage on the Green." Anything that can be done to provide opportunity to integrate more waste reduction practices benefits each of us as individuals and as a community.

Respectfully yours,

Aaron Gottlieb
Owner

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Health and Safety Measures: Oversight

The university's environmental health and safety team and the General Counsel were consulted at the start of project to address potential liabilities.

- We considered what types of personal protection equipment (i.e., gloves, coveralls, eye wear) were needed for the waste sort.
- Our top concerns included minimizing the exposure to and contact with sharp objects (e.g., razor blades, hypodermic needles and broken glass), blood borne pathogens, and other communicable diseases.
- *All volunteers* received training and personal protection equipment and signed a "volunteer acknowledgment and informed consent" form *before* participating.
- A representative from the environmental health and safety team was on-site during the waste sort.

UNF GARBAGE ON THE GREEN
Volunteer Acknowledgment and Informed Consent

By my signature below, I acknowledge that as a volunteer for the March 8, 2007 UNF Garbage on the Green ("Activity"), I acknowledge, understand, and accept the risks associated with my participation in the Activity and further agree to adhere to the Activity's requirements as set forth below.

The risks involved in this Activity include those that would be foreseeable in handling waste (garbage and trash) contained in waste receptacles from academic buildings, residence halls, and food service facilities. As such, the specific risks include but are not limited to exposure to industrial and/or household solutions, agents, cleaners, etc. and contact with sharp objects including broken plastic, broken glass, cardboard, paper, food, razor blades, hypodermic needles or other objects that could puncture, cut, scrape or otherwise cause harm to the participant. Additionally, based on the nature of the objects to be handled or coming into contact with in the Activity there is a risk of exposure to blood borne pathogens and the potential for exposure to communicable disease including but not limited to HIV, AIDS, Hepatitis, etc.

1. I acknowledge and agree that I am required to act in a reasonable manner at all times during the Activity.
2. I acknowledge and agree that I must observe all state and local laws and UNF regulations and policies. I also acknowledge and agree that I must observe and comply with the specific rules and conditions developed for participation in the Activity by the Activity's organizers including the requirement to wear provided personal safety equipment (i.e., eye wear, gloves, overalls, etc.). I further acknowledge and agree that I have been advised of the importance to routinely wash my hands upon removal of gloves during and at the completion of the Activity to avoid the spread of bacteria, germs, communicable diseases, etc.
3. I have been provided the opportunity to inquire and discuss the possible risks and hazards to me resulting from my participation in the Activity. I further acknowledge and agree that in the event I suffer an injury during the Activity, regardless of the severity, that I am required to immediately report any injury.

(Signature and Student ID#) _____

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**UNF GARBAGE ON THE GREEN
Equipment List
(in-kind contribution***)**

- Floor scale (electronic) – weighs to hundredth of a pound***
- Outdoor electrical extension cords***
- Laptop computer w/ Excel ***
- Several outdoor tarps
- Fifteen, 3-gallon Rubbermaid buckets w/ handles – used to sort material
- Fifteen large steel salad tongs – used to sort material
- Clip boards and several boxes of pencils***
- Banquet tables***
- A portable dumpster and a dozen 60-gallon receptacles***
- Name tags***
- Personal Protection Equipment*** approved by UNF's EH&S Department
 - 2 boxes of Nitrile gloves (puncture resistance/water proof)
 - 50 barrier gowns (TYVEK)
 - 1 box of TYVEK coveralls (100 suits)
 - 2 boxes of shoe covers (100 pairs)
 - 45 safety glasses
 - 1 red sharps container/bio-waste box
 - 6 boxes of Sani-wipes

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Waste Audit Procedure

SAFETY FIRST! Inspect all items carefully before handling. Be especially careful not to handle broken glass or anything sharp. If you see anything looking vaguely like a hypodermic syringe, stop sorting that bag and let the UNF event coordinator and staff know right away!

A NOTE ON PRIVACY...Discretely look away! While it's likely that you may read what is written on papers tossed into the trash, we don't have the author's consent to read it. Remember what Grandma said you should do if your eyes happen to fall on mail that is not addressed to you: "Discretely look away, dear."

Wash Hands... Make sure to wash your hands thoroughly with soap and hot water after you leave.

1. Put your name(s) on top of each form and fill in the name of your class/organization.
2. Each bag will have a color painted on it. The color of the paint will tell you the building location. Enter the bag location on the form. (NOTE: Bags that are marked also "green" came from recycling containers and NOT the garbage.
3. Select a bag from the trash/recycling pile.
4. Weigh the bag and record the total weight on the top of the form. (NOTE: Record weight to the nearest tenth of a pound for example: 12.1 pounds, 102.2 pounds.
5. Place bag on sorting table. Untie bag or rip open if necessary. If any hazardous, putrescent (i.e. smelly) or infectious waste is present, set bag aside, re-close, and tell the event coordinator/staff: "It is a "Dirty Bag".
6. Sort content of bag by the first category -white office paper. Place the white office paper into bucket. Log the weight (minus the weight of the bucket). If there are no items in a given category place a zero for that category weight. Place in "White Office Paper" recycling bin at the end of the table.
7. Sort content of bag by the next category, repeating steps in #6, remembering to log weights. Give the completed form to the person sitting at the laptop computer. Grab a new waste audit form to fill out and start again at step #1.

**UNF GARBAGE ON THE GREEN
BAG AUDIT FORM**

GENERAL INFORMATION

Student(s) name: _____ Class/Organization name: _____

Bag location (check ONE building): #42 Bldg Courtyard Osprey Hall # 51 Bldg

Container bag came from (check ONE): Recycling container Garbage container

Total weight of bag (before opening): ☆ **Weight:** _____ (pounds) ☆

SEPARATION CATEGORIES: Paper

White Office Paper _____ (pounds)

OK – printed white office paper (color ink OK)

NO – glossy paper, magazines, colored paper, newspapers, brochures, post-its, food paper, hygiene materials

Mixed Paper _____ (pounds)

OK – notebooks, notepads, glossy paper, magazines, shoe/shirt boxes, cereal boxes, colored paper, newspapers, brochures, post-its, envelopes, and file folders

NO – cardboard, carbon paper, food paper, hygiene materials

Corrugated Cardboard _____ (pounds)

OK – cardboard with wavy material in it (e.g., shipping boxes)

NO – waxy material, food paper, hygiene materials

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| <i>LBS Recovered/ Total LBS Percent Recovered</i> | Building #42 (Academic) | Building #51 (Academic) | Osprey Hall (Residential) | Alumni Cafe (Outside food court) |
|---|------------------------------------|------------------------------------|--------------------------------------|---|
| Paper (Total) | 53.6/ 133.0 lbs 40.3% | 66.2/ 147.4 lbs 44.9% | 0.5/ 13.8 lbs 3.6% | 6.9/ 38.7 lbs 17.8% |
| White office paper | 20.1/ 34.5 lbs 58.3% | 8.6/ 42.0 lbs 20.5% | 0/ 2.6 lbs 0% | 0.3/ 7.4 lbs 4.0% |
| Mixed paper | 31.1/ 89.4 lbs 34.8% | 55.7/ 100.3 lbs 55.5% | 0.5/ 10.4 lbs 4.8% | 6.5/ 27.6 lbs 23.6% |
| Corrugated (cardboard)* | 2.4/ 9.07 lbs 26.5% | 1.9/ 5.1 lbs 37.3% | 0/ 0.8 lbs 0% | 0.1/ 3.7 lbs 2.7% |
| Plastics (#1 & #2) | 10.2/ 42.2 lbs 42.1% | 5.7/ 18.2 lbs 31.4% | 22.3/ 35.2 lbs 63.4% | 7.3/ 33.7 lbs 21.7% |
| Metal cans | 0.3/ 3.83 lbs 7.83% | 0.5/ 3.9 lbs 12.8% | 0.7/ 3.2 lbs 21.9% | 2.2/ 5.2 lbs 42.3% |
| Glass bottles | 2.0/ 7.4 lbs 27.0% | 1.2/ 4.4 lbs 27.3% | 0/ 5.6 lbs 0% | 2.0/ 12.3 lbs 16.3% |
| Weight of Waste Stream | 218 lbs | 254 lbs | 160 lbs | 222 lbs |
| Weight Recovered | 61.1 lbs | 73.6 lbs | 23.5 lbs | 18.4 lbs |
| Recovery as a Percent of the Waste Stream | 30% | 29% | 15% | 8% |

Includes waste from four UNF locations during a 24 hour period: Building #42 (Academic), Building #51 (Academic), Osprey Hall (Residential) and Alumni Courtyard (Outside food court).

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- Three Recommendations :
 - 1. Establish a formal waste reduction program targeting: *paper, plastic and food packaging waste.*
 - 2. Create a waste reduction committee
 - 3. Dedicate resources to promote the recycling/waste reduction of paper, plastic and food packaging.

Link to the final report of the waste audit.

http://www.unf.edu/dept/ecenter/dl/GOG_Report'07.pdf

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