SOLID WASTE & RECYCLING

INTRODUCTION

Based on WCU's 2012 STARS Report, 306 tons of materials were recycled, composted, reused, donated, re-sold or otherwise diverted while 1,417 tons of materials were disposed in a solid waste landfill or incinerator. The next step is for WCU to join other colleges and universities that are striving to become Zero Waste campuses.

GOALS

Achieve significant annual decreases in embodied carbon by reducing solid waste and increasing rates of recycling and composting, with the ultimate goal of becoming a 'Zero Waste' campus where more than 90% of "waste" is diverted from landfills and incinerators through materials education, reduction, re-use, recycling, and composting.

SUMMARY OF PROJECTS AND INITIATIVES

1.Solid Waste Policies and Planning
- Objective 1.1 – Establish a Campus Zero Waste Working Group
- Objective 1.2 – Develop/Implement a Campus Zero Waste Policy & Strategy
- Objective 1.3 – Require Construction/Demolition Waste Management Plans

2. Zero Waste Education
- Objective 2.1—Add a Zero Waste Program to New Student Orientation
- Objective 2.2—Include West Chester University's Zero Waste Policy in all Syllabi

3. Reduce (and Refuse)
- Objective 3.1 – Transition to Paperless Courses and Offices
- Objective 3.2 – Ban Single-Use Water Bottles and Encourage Reusables

4. Reuse (and Repurpose)
- Objective 4.1— Reuse, Donate, and Sell Move-Out Waste on and Off Campus
- Objective 4.2— Reuse "Waste" Cooking Oil to Generate On-Site Electricity

5. Recycle
- Objective 5.1—Formally Participate in the Annual RecycleMania Competition
- Objective 5.2—Provide each Residence Hall Room with a Recycling Bin
- Objective 5.3 – Donate, Reuse, and Recycle Electronic Materials

6. Compost

Objective 6.1 — Initiate Composting of Food Waste
Objective 6.2—Place Compost Bins throughout Campus and at Catered Events
Objective 6.3 — Investigate the Feasibility of On and Off-Site Composting
Objective 6.4 – Create Additional Composting Sites for Educational Purposes

PROJECTS AND INITIATIVES

1. Solid Waste Policies and Planning

OBJECTIVE 1.1 – ESTABLISH A CAMPUS ZERO WASTE WORKING GROUP

Zero Waste Working Group Outcomes: The Climate Action Plan Implementation committee develops the composition and mission of the Working Group in consultation with the VP for Finance and Administration and other university staff as needed. The Working Group will be charged with developing, implementing and monitoring a Zero Waste Policy at WCU.

- Resources Needed: Funding for a Working Group Coordinator/Intern
- Implementation Time Frame: By 2014

OBJECTIVE 1.2 – DEVELOP/IMPLEMENT A CAMPUS ZERO WASTE POLICY & STRATEGY

Zero Waste Policy Outcomes: Develop and implement a policy and strategy for achieving zero waste by a target date established by the Zero Waste Working Group. For the purposes of this effort, a Zero Waste Campus is defined as one that consistently diverts more than 90% of material from landfills and/or incinerators. The Policy will include targets for a) reducing waste at the source; b) increasing recycling rates; c) diverting waste toward reuse; d) diverting biodegradable waste toward composting, plus other reduction and diversion strategies identified by the Working Group. The plan will make provisions for an annual waste stream audit; designate staff responsible for implementing the plan; outline proposed actions for reducing waste; articulate tracking and review procedures; and include deadlines for achieving targets and goals. (See, for instance, American University's **Zero Waste Policy**).

- Action Step: Charge the Campus Zero Waste Working Group with developing, implementing, and assessing the University's Zero Waste strategy.
- Implementation Time Frame: By 2014

OBJECTIVE 1.3 – REQUIRE CONSTRUCTION/DEMOLITION WASTE MANAGEMENT PLANS

Construction/Demolition Waste Management Outcome: Establish a protocol for contractually requiring that all West Chester University bid projects include a construction and demolition waste management plan. Such plans, when implemented, reduce the amount of site debris waste going to landfills and are thus financially and environmentally responsible.

- Implementation Time Frame: By 2014.

2. Zero Waste Education and Training

OBJECTIVE 2.1—ADD A ZERO WASTE PROGRAM TO NEW STUDENT ORIENTATION

Zero Waste in New Student Orientation Outcome: Starting in 2014, new WCU students will be introduced to critical sustainability initiatives via the **Awakening the Dreamer Symposium**. The presentation will also include an explanation of the University's Zero Waste Policy and other campus sustainability initiatives.

- Implementation Time Frame: Beginning with August Part II or Welcome Week 2014
- Action Steps: The Office of New Student Programs will collaborate with the Office of Sustainability to create a council to oversee the program. WCU Eco-Reps will organize a presentation that includes the Symposium, the Zero Waste Policy, and other critical sustainability topics.

OBJECTIVE 2.2—INCLUDE WEST CHESTER UNIVERSITY'S ZERO WASTE POLICY IN ALL SYLLABI

Zero Waste Policy in Syllabi Outcome: All professors will include West Chester University's Zero Waste Policy in all syllabi, along with other important information such as the ADA policy.

3. Reduce (and Refuse)

OBJECTIVE 3.1 – TRANSITION TO PAPERLESS COURSES AND OFFICES

Paperless Courses and Offices Outcome: Include in the University's Zero Waste Policy a commitment to transition to paperless courses and offices.

OBJECTIVE 3.2 – REDUCE SINGLE-USE WATER BOTTLES AND ENCOURAGE REUSABLES

Reduce Water Bottles and Encourage Reusable Containers Outcomes: Set targets for significantly reducing (and possibly banning) the sale of single-use bottled water at WCU, promote the use of refillable, reusable containers, and install additional water filling stations throughout the campus.

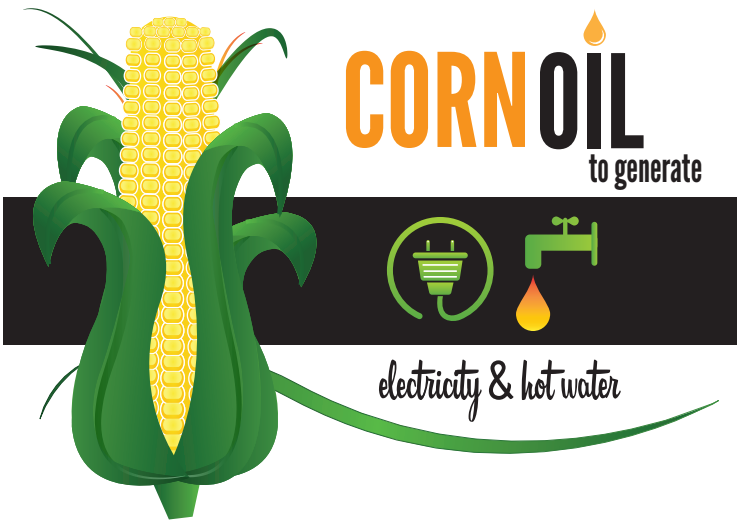
- Action Step: Include in WCU's Zero Waste Policy a commitment to reducing and possibly banning the sale of single-use water bottles on the WCU campus.
- Action Step: Provide reusable cups/mugs during New Student Orientation.
- Incentive the use of reusable containers through discounts.
- Action Step: Purchase Elkay water filling stations ($634.00 each plus installation)
- Implementation Time Frame: By 2015

4. Reuse (and Repurpose)

OBJECTIVE 4.1— REUSE, DONATE, AND SELL MOVE-OUT WASTE ON AND OFF CAMPUS

Reduce Move-Out Waste Outcome: Establish a process for collecting, reusing, donating and/or reselling move-out "waste" both on and off campus. Collections are made in May and items are then immediately sold via a "yard sale" and proceeds donated, or stored for resale to incoming students in August.

- Action Step: Continue to formalize a relationship with the Borough of West Chester (Public Works), Goodwill, and other community-based organizations to establish an off-campus waste collection and resale process.
- Action Step: Establish an on-campus move-out committee charged with studying the feasibility of implementing an annual collection in May and resale in August.
- Implementation Time Frame: Fall 2013 with the objective of collecting in May 2014.



OBJECTIVE 4.2— REUSE "WASTE" COOKING OIL TO GENERATE ON-SITE ELECTRICITY

Waste Cooking Oil to Electricity Outcome: Purchase the **Vegawatt** system, which uses waste cooking oil as a source of fuel to generate on-site electricity and hot water. The Vegawatt's size is comparable to that of a refrigerator and will be installed adjacent to the outside wall of its respective building and will operate using a single-line connection. It also ties into existing electricity and heating systems for easy implementation.

- Action Step: Initiate conversations with Aramark about the feasibility of installing a Vegawatt system in Lawrence.
- Resources Needed: $20,000 plus installation
- Implementation Time Frame: Begin discussions in Fall 2013.

5. Recycle

OBJECTIVE 5.1—FORMALLY PARTICIPATE IN THE ANNUAL RECYCLEMANIA COMPETITION

RecycleMania Participation Outcome: West Chester University will be a formal participant in **RecycleMania**, which seeks to motivate students and staff to increase recycling efforts and reduce waste generation while encouraging colleges to measure and benchmark recycling activity in an effort to improve their programs over time. It takes place in the spring and lasts for 8 weeks. Campuses all across the nation compete to have the highest rate of recycling.

- Goal: Exceed the Commonwealth of PA recycling goal of 35% of the campus waste
- Implementation Time Frame: Beginning in Spring 2014

OBJECTIVE 5.2— INCREASE THE NUMBER OF RECYCLING BINS PLACED ON CAMPUS

Recycling Bin Outcome 1: Recycling bins will be purchased for every residential room on campus. According to the Gettysburg College Climate Action Plan, "a study in 2006 found that when first-year dorm rooms were supplied with recycling bins and garbage bins, recycling increased because students were not using their recycling bin for garbage."

- Implementation Time Frame: By 2015
- Action Step: Resources: Approximately $14,000 for recycling bins

Recycling Bin Outcome 2: Place a recycling container next to all existing trash containers on campus.

- Action Step: Purchase and place the recycling containers
- Resources Needed: Unit cost: $1,000. Unit count: 50.

Total cost = $50,000.

Recycling Bin Outcome 3: Add a mini-bin recycling program for all offices. The mini-bin program replaces large trash cans using plastic liners with a mini-bin with no liner, and replaces 14 quart recycling containers with larger 28 quart containers. The program encourages office occupants to use their recycling bin more frequently than their trash bin, thereby increasing the recycling rate and eliminating 250,000 trash can liners yearly from the waste stream.

- Action Step: Begin implementing the mini-bin program throughout campus.

OBJECTIVE 5.3 – DONATE, REUSE, AND RECYCLE ELECTRONIC MATERIALS

Background: Electronics are classified as the fastest growing source of solid waste as well as the most dangerous. Recyclers recover more than 100 million pounds of materials from electronics each year, and much of it is exported to developing countries where the components are inefficiently broken down and toxins are released into the environment.

Electronic Materials Outcome: Establish a donation, trade, and disposal system that uses electronics flea markets and e-waste drop boxes. Work with Environmental Health and Safety to expand their battery disposal contract to all electronic devices.

- Action Step: Consult with JT Singh in Academic Computing about prospects for continuing to dispose of electronic waste in the safest and most effective way.
- Implemented Time Frame: By 2015

6. Composting

OBJECTIVE 6.1 — INITIATE COMPOSTING OF FOOD WASTE

Composting Food Waste Outcome: Compost receptacles will be placed in the dining halls and the food court. Collected material will be placed in **Earth Tubs**, which are "fully enclosed composting vessels featuring power mixing, compost aeration, and biofiltration of all process air." One Earth Tub handles up to 100 lbs. of biodegradables per day.

- Action Step: Investigate the feasibility of purchasing and using Earth Tubs at WCU
- Action Step: Consult with Aramark about the feasibility of collecting and composting food waste.
- Resources Needed: $11, 475 per unit plus installation and labor costs.

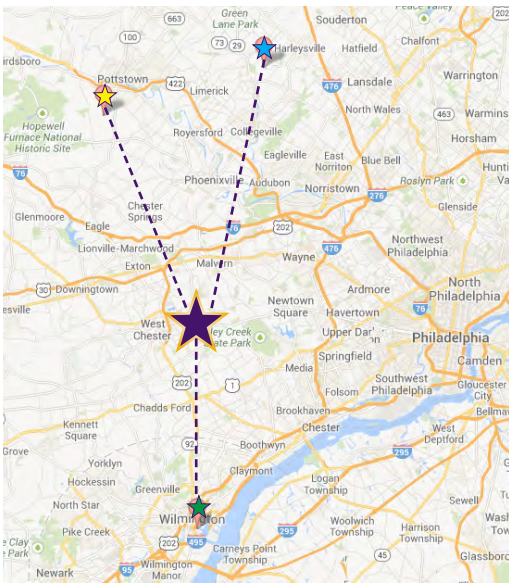
OBJECTIVE 6.2—PLACE COMPOST BINS THROUGHOUT CAMPUS AND AT CATERED EVENTS

Compost Bin Placement Outcomes: Compost bins are placed through the University – primarily in the dining areas, residence halls, and at all catered events. This objective is modeled after the University of North Carolina, Chapel Hill's successful **food waste composting initiative.**

- Action Step: Investigate feasibility of including compost collection among staff duties

OBJECTIVE 6.3 — INVESTIGATE THE FEASIBILITY OF ON AND OFF-SITE COMPOSTING

Composting Feasibility Outcome: A study is conducted to determine the feasibility and relative merits of using regional, off-campus composting sites versus establishing a large-scale composting operation on campus. The site would be responsible for accepting compostable waste from WCU's dining and grounds operations. Regional options include the **Peninsula Compost Group** in Wilmington, DE (approximately 18 miles), Barnside Mulch and Compost in Schwenksville, PA (approximately 37 miles), and **Arborganic Acres** in Pottstown, PA (approximately 24 miles).



REGIONAL OPTIONS FOR OFF-SITE COMPOSTING

★ BARNSIDE MULCH AND COMPOST (37 MILES)

★ ARBORGANIC ACRES (24 MILES)

★ PENINSULA COMPOST GROUP (18 MILES)

OBJECTIVE 6.4 – CREATE ADDITIONAL COMPOSTING SITES FOR EDUCATIONAL PURPOSES

Small Educational Composting Site Outcomes: Build and maintain at least two more education-oriented composting sites on the West Chester University campus. These sites would be similar in size and design to the current composting area in the Outdoor Classroom & Demonstration Garden outside of Merion. These sites would be coordinated by the Outdoor Classroom Intern, and maintained by students in courses and clubs, with the aim of providing educational benefit as well as usable compost for campus garden projects. Implementation Time Frame: By 2015