



**Appalachian State University
 Boone, North Carolina
 Waste Reduction**

SCHOOL

Mountaineers, Public, 4-year, approximately 17,000 students, in Boone, North Carolina.

ABSTRACT

Appalachian State University (Appalachian) is committed to becoming a zero waste campus through a goal of 90% diversion by 2022. Using zero waste as a guiding principle, this diversion rate can be restated as a 90% diversion of municipal solid waste (MSW) from the landfill. Zero waste seeks to rethink the way resources and materials flow through the university by taking a whole system approach. This approach will strive to reduce overall consumption, return material goods for reuse, compost all applicable organic matter to promote new growth, and then recycle goods and materials at the end of their usage lifespan. Appalachian has made great strides in achieving a 40% diversion rate in part due to student-led waste reduction and recycling programs. Appalachian students have developed and implemented highly successful programs, such as Recycle at the Rock, which since its inception in 2008 has diverted 36.87 tons of recycling from the landfill. Appalachian Food Services also plays a key role in our waste diversion effort. All pre-consumer food waste is collected and composted. Appalachian’s commitment to zero waste benefits the community, locally and globally, by reducing carbon emissions from excess manufacturing, distribution, and waste disposal. This initiative also achieves significant monetary savings for the university through recycling income streams and reduced waste management costs.

GOALS AND OUTCOMES

Goals

The overarching goal of this initiative is to become a zero waste campus by the year 2022, educating our community of learners along the way. We have created a timeline to guide this process and ensure success over the next ten years.

Period	Description	Foci
2012-2014	The Now	Awareness, Operational and Organizational Readiness
2015-2018	The Foreseeable Tomorrow	Infrastructure Upgrades, Cultural/Behavioral Shift
2019-2022	The Sustainable Future	Transformation, Paradigm Shift

There are several goals set for the first three-year period, 2012-2014. Below is a list of these goals and a brief description.

Conduct a Comprehensive Waste Audit - A waste audit will quantify the amount and types of waste being generated by the university, help to measure the effectiveness of the campus community’s waste

management and recycling habits, and identify opportunities for improving waste management systems and strategies.

Expand Reuse and Recycling Efforts – Institute further recycling programs around campus, similar to existing recycling program “Recycle at the Rock”, which diverts recyclable material generated during football and tailgating events from the landfill.

Expand Composting Efforts – Strengthen collaborative efforts with Appalachian Food Services to increase pre- and post-consumer composting collection and promote a compostable product line.

Institute an Environmental Preferable Purchasing Program – Form a work group to begin development of this program, identify stakeholders, and conduct research on successful purchasing programs at other universities and state agencies.

Encourage Campus Engagement – Develop process to track waste reduction data and report to the public. Graduate assistants will lead the development of this tracking process and organize green events to showcase the university’s zero waste commitment.

Accomplishments and Outcomes

The goal of drastically reducing our campus waste excites us but we know it will demand our constant attention, efforts, and sacrifices over a long period of time. The timeline and initiatives described above have begun as students continue to take on leadership roles. Student-led recycling and composting programs are providing valuable work experience as well as research opportunities. Listed below are several waste reduction accomplishments that will be built upon and used as framework to achieve our goal of zero waste.

Waste Reduction and Recycling Program - In 2006, this program was updated with new recycling stations, more waste diversion containers across campus, a new logo and website, and increased outreach and education led by students.

Electronics Reuse and Recycling - Electronics recycling program created through collaborative efforts with private industry which allows the university to recycle computer equipment, televisions, cell phones, as well as technotrash, such as DVDs, CDs, and printer cartridges.

Recycle at the Rock Program – Student-led initiative to divert recyclable waste from the landfill which is generated from football and tailgating events on campus.

Composting Program – The composting program was created by students in 1999 when a small static demonstration pile was formed. Due to growing demand for capacity, a new, cutting-edge composting facility was built and opened in 2011. The new composting facility can handle up to 275 tons annually.

Goods Exchange (Swap) Events - Events which invite university and community members to bring their unwanted stuff (clothes, books, kitchen goods, etc.) and look around for other stuff which might strike their fancy. These events are a great way to interact with the community and keep good stuff out of the landfill.

“Don’t Throw it Away” Program – Coordinated by the Appalachian and Community Together Program (ACT), “Don’t Throw it Away” receives donated furniture, lamps, bathroom accessories, etc. from university student’s end-of-year move out. These items are then sold at the beginning of the school year to raise money for local organizations.

Challenges and Responses

The university has made commitments within all levels of the administration and support systems that give backing to the Waste Reduction Strategic Plan and zero waste 2022 goal. As this effort progresses in the future, appropriate Sustainability Council members, subcommittees, and stakeholders will be identified and asked to collaborate in an effort to maximize expertise when allocating resources to the initiative. While there are no guiding enforcement rules or penalties with the goals of the zero waste 2022 goal, it will become the responsibility of the entire Appalachian community to engage and ensure that the interim and final goals are appropriately managed and completed.



Campus Climate Action: Your School’s Carbon Footprint

A commitment to zero waste is a commitment to addressing global warming. Central to this initiative is the shift in thought processes from reactive to proactive. This initiative engages all of the administrations and sectors within the university and asks them to recognize what they buy, how they use it, and ways in which these products can be recycled or reused after initial use. This shift in thinking will allow the university to purchase products which are manufactured more sustainably, used more efficiently, disposed of less and recycled more; these facets directly reduce the amount of fossil fuel energy used to manufacture, transport, and dispose of products used on campus.

Due to composting, Appalachian receives valuable carbon offset credits toward their goal of greenhouse gas emissions reduction. The composting program was updated in 2011 with a new compost facility. The aerobic digestion of biological material in composting produces less methane than anaerobic digestion commonly found in landfills. This program also reduces the amount of transportation needed to dispose of this material and provides the campus with a valuable, cheap fertilizer.

Commentary and Reflection

Institutions of higher education have an opportunity to teach students outside the classroom. Educators interested in a similar project should first consider how students can be involved with the project. It is important to connect students with the project from the beginning. Going further, time should be spent

considering how your project will offer research and engagement opportunities for your campus and local community.

Important to the success of a similar project is demonstrating its economic benefit to the university administration. Reducing waste and carbon emissions are ideas that can stand have sustainability merit but often require financial justification to reach implementation. Appalachian's commitment to zero waste will save (less hauling/tipping fees) and make money (recycling).

ENGAGEMENT AND SUPPORT

Leaders and Supporters

The Office of Sustainability (OS), in conjunction with campus services, has led in the coordination and creation of this planning document. Many elements of the university have played significant roles in its preparation. These groups include: university administrators, faculty members, staff members, and students. Also engaged in this process will be the University Sustainability Council, which was founded in 2008. A Purchasing and Waste Subcommittee has been created that will manage and track the progress of the movement towards zero waste.

Listed below are some of the many persons who will play a part in this effort:

Dr. Kenneth Peacock, Chancellor

Greg Lovins, Vice Chancellor Business Affairs

Carol Acquesta, Director of Planning, Design, and Construction

Jim Bryan, Landscape Services Superintendent

Debbie Carriere, Building Services Manager

Todd Cherry, Economics Faculty, Purchasing and Waste Subcommittee

Gerald Combs, Recycling Operations Manager

Jake Cox, SGA Director of International and Environmental Affairs, Purchasing and Waste Subcommittee

Tom Van Gilder, Director of Technology Support Services, Purchasing and Waste Subcommittee

Dr. Tom Kane, University Housing Director

Art Kessler, Food Services Manager

Jennifer Maxwell, Resource Conservation Specialist, Purchasing and Waste Subcommittee

Ged Moody, University Sustainability Director

Seth Norris, Director of Environmental Health Safety & Emergency Management, Purchasing and Waste Subcommittee

Mike O'Connor, Physical Plant Director

Dwayne Odvody, Director of Materials Management, Purchasing and Waste Subcommittee

Karl "Casey" Pond, MBA Student, Sustainable Business, Class of 2011

Dave Robertson, Director of Student Programs and the Plemmons Student Union, Purchasing and Waste Subcommittee

Crystal Simmons, Sustainability Specialist

Jeff Talbot, Purchasing Manager, Physical Plant

Dr. Greg Taylor, Director of Campus Services Division, Purchasing and Waste Subcommittee

Linda Toth, Sustainability Graduate Assistant, Class of 2013

Funding and Resources

It is difficult to determine a total cost for this initiative. The Office of Sustainability is supporting and coordinating this initiative, however resources for this initiative come from other units and departments across campus. They include:

- Campus Food Services (receipt supported)
- University Housing (receipt supported)
- Landscape Services (state supported)
- Building Services (state supported)
- Technology Support Services (state supported)
- Physical Plant (state supported)
- Materials Management (state supported)
- Renewable Energy Initiative (student funded)

Education and Community Outreach

Appalachian continues to build a sustainable community in which all community members are educated in the principles of sustainability. These sustainable practices also extend outside the campus walls via outreach efforts. Numerous workshops are offered annually on topics ranging from sustainable development to renewable energy to green entrepreneurship. The waste reduction and recycling programs described in this case study engage the campus community every day and offer numerous opportunities to interact and educate the local community.

A great example of community outreach is the Recycle at the Rock Program. This program has seen great success engaging the public at Appalachian football and tailgating events. Appalachian football fans have grown accustomed and look forward to receiving their green recycle bags on fall Saturday mornings. In the 2011 football season, 9.44 tons of material was recycled.

CONTACT INFORMATION

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MORE ABOUT YOUR SCHOOL

Campus Sustainability History

Sustainability is more than an initiative at Appalachian State University- it is a way of life that is becoming increasingly ingrained into the campus community's individual and institutional decision-making. Appalachian has a rich history of commitment to sustainable practices. Besides having the nation's oldest, recognized Sustainable Development (1991) and Appropriate Technology (1984) academic programs, Appalachian



rethinks common practices and implements state of the art technologies related to energy production and energy conservation on campus. The Office of Sustainability was created in 2009. Since its inception, the university has made tremendous strides toward the overarching goal of carbon neutrality. A 50-plus member Sustainability Council was developed to help guide university operations into more sustainable practices. For the sixth year in a row, SIERRA magazine is releasing its annual ranking of the nation's "Coolest Schools," and this year Appalachian has moved into the No. 10 spot. Appalachian recently received a Gold rating in the Sustainability Tracking, Assessment and Rating System (STARS®). For more information about sustainability at Appalachian, visit the university sustainability website at www.sustain.appstate.edu.

Image Credit: Appalachian State University