

2011

An Active Pursuit of Sustainability



 THE AMERICAN
DREAM IS
GREEN

Office of Sustainability
American University

About this Report

This report is the product of American University's Climate Action Project Team. It was published on May 15, 2010 in accordance with the deadline mandated by the university's pledge to the American College and University Presidents' Climate Commitment. The report is available from the university's Office of Sustainability and online at www.american.edu/sustainability.

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1 Education & Research

1.1 Co-Curricular Activities

1.1.1 Green Eagles Student Sustainability Educators

The Green Eagles program engages students to serve as educators in peer-to-peer sustainability outreach, helping to disseminate sustainability concepts and culture throughout the campus community. Serving as a Green Eagle is a valuable learning experience for students that can deepen their understanding of sustainability while developing their outreach and education skills.

The Office of Sustainability hires one or more students in each residence hall as part-time workers. Sustainability staff meet and convene these resident student “Green Eagles” for weekly sustainability trainings during the fall and spring semesters. The program was launched with 12 Green Eagles in the fall of 2010.

In 2011, the Office of Sustainability will expand this program to non-resident students, as well as to faculty and staff.

1.1.2 Student Sustainability Outreach Campaign

Outreach campaigns are an important means of raising campus awareness about sustainability and encouraging the campus community to adopt sustainable practices. In 2010, two campus sustainability campaigns were conducted.

From February 1 through March 27, 2010, AU participated in RecycleMania, a national campus recycling competition. During the competition, the campus recycling rate increased from 43% to 64.9 percent. American University placed third nationally out of over 600 competing colleges and universities.

From November 1-19, 2010, the university participated in the Campus Conservation Nationals energy reduction competition. All residence halls participated in the CCN competition in 2010, the university's first ever such residence hall energy competition. Student energy conservation during the competition saved more than 34,000 kWh of electricity, preventing 123,000 pounds of greenhouse gas emissions, and saving over \$4,000 in electricity expenses.

1.1.3 Sustainability in New Student Orientation

American University begins educating students about sustainability as soon as they arrive on campus. The Office of Sustainability trains student orientation leaders on campus sustainability during the summer. The Office of New Student Programs (NSP) reviews AU's sustainability practices during new student orientation and suggests practical ways students can be more sustainable both on and off campus. NSP distributes a digital CD containing orientation materials that were previously provided as printed fliers and brochures. They also reuse orientation name badge holders. In past years, NSP has partnered with Whole Foods Market to provide incoming students with reusable grocery bags. In addition to NSP's efforts, the Office of Sustainability staffs a table during orientation to provide incoming students with information and opportunities about how to participate in sustainability activities at AU.

1.1.4 Sustainability Outreach Materials

Outreach materials and publications enhance campus learning about sustainability, helping to propel lifestyle changes that conserve resources, and emphasizing the importance of sustainability as a university value.

Outreach materials and publications in 2010, which were managed by the Sustainability Outreach Coordinator, included:

- ▶ Sustainability website: www.american.edu/sustainability
- ▶ Sustainability newsletter launched in September, 2010
- ▶ Campus sustainability features and building energy consumption are displayed online at buildingdashboard.net/American, and also appear on select flat screen monitors in building lobbies
- ▶ Signs in the Terrace Dining Room promote the benefits of trayless dining, local and organic foods, and vegetarian meals
- ▶ A sustainability walking map identifies campus sustainability features as well as academic sustainability programs
- ▶ "The Weekly Greening" is a weekly publication from the Office of Campus Life containing green tips for the home and office.
- ▶ The Eagle regularly covers sustainability and has a circulation of 8,000 and a popular Web site
- ▶ One-page case studies on LED lights, bottled water alternatives, copy paper and printers
- ▶ Brochure about the university's carbon-neutrality efforts

1.1.5 Student Group

Eco-Sense is American University's premier organization dedicated to promoting environmental sustainability on campus, in the community, and in students' everyday lives through student awareness, volunteering, promotion of sustainability best-practice on campus, eco-certification, and political activism. The group is committed to fighting climate change by increasing awareness and understanding of human impacts on the environment, as well as conveying the idea that leading an environmentally sustainable life is in the best interests of human beings. All actions are aimed to incorporate social justice issues as well as to create a healthy and environmentally sustainable future for all.

1.1.6 Organic Garden

American University's organic, community garden is located next to Nebraska Hall. Students, staff, and faculty volunteers manage the garden. In 2010, volunteers harvested a variety of fruits and vegetables such as watermelon, sunflowers, basil, parsley, pumpkins, tomatoes, eggplant, peppers, beans, broccoli, lettuce, and corn. Some produce from the garden is used in the Terrace Dining Room and some is donated to a local food bank, Bread for the City. The rest is distributed to garden volunteers.

Plans are being considered to develop a larger community garden to replace the unused parking area in the Clark, Roper, Gray, McGabe quadrangle.

1.1.7 Model Dorm Room

In 2011, the Office of Sustainability and Housing and Dining Programs plan to develop a model green dorm room designed to showcase green features standard in all rooms as well as to highlight practices and products that resident students can use to green their room and campus lifestyle.

1.1.8 Themed Housing

"Sustainable Earth" is a campus living and learning community offered through American University's University College program, in which a group of students takes a common course on sustainability and live together on the same residence hall floor. Additionally, a sustainability interest group inhabits a floor in McDowell Hall.

1.1.9 Sustainable Enterprise

The School of International Service houses the Davenport Lounge, a coffee shop run by students. The Davenport serves all organic and fair trade coffees and teas; composts coffee grounds, cups, napkins, and utensils; gives a discount for using a reusable mug; provides free reclaimed/returnable mugs; uses solar heated water; and features LED lighting. The building where the Lounge is located was designed to be LEED Gold certified - certification was pending when this report was submitted.

1.1.10 Sustainability Events

AU started the year 2010 by hosting the Sustainability, Tracking, and Ratings System (STARS) kickoff and held the annual national Biodiesel Conference in 2009. Throughout the year, our student environmental club, EcoSense, and our School of International Service host many speaker series related to the environment and sustainability.

1.1.11 Outdoors Program

The Outdoors Club is dedicated to creating a stronger relationship between students and the environment, offering trips throughout the year, including hiking, biking, kayaking, and camping.

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1.2 Curriculum & Research

A committee convened in November 2009 to create guidelines for identifying sustainability in curriculum and research.

The Committee included: Kathleen Getz, Senior Associate Dean for Academic Affairs, Kogod School of Business; Dr. Sikina Jinnah, Assistant Professor, School of International Service; Stephen MacAvoy, Assistant Professor, Department of Environmental Science; and Chris O'Brien, Director, Office of Sustainability as facilitator.

The committee developed these guidelines to identify sustainability in curriculum and research:

- "Sustainability-Focused" courses concentrate on the concept of sustainability, including its social, economic, and environmental dimensions, or examine an issue or topic using sustainability as a lens.
- "Sustainability-Related" courses incorporate sustainability as a distinct course component or module, or concentrate on a single sustainability principle or issue.
- "Sustainability Research" focuses on a key principle of sustainability (such as social equity or environmental stewardship); addresses a sustainability challenge (such as climate change or poverty); or furthers our understanding of the interconnectedness of societal and environmental challenges. Sustainability research leads toward solutions that support economic prosperity, social well-being, and ecological health.

Using the above guidance, faculty were surveyed in January 2011 in order to identify sustainability curriculum and research. More than 400 faculty responded, producing the results described below.

1.2.1 Curriculum

The goal of sustainability education is to provide students, regardless of their courses of study, the knowledge and skills to help create a healthy economy, society, and environment. To determine whether or not a course has this goal in mind, consider whether or not a given course will help students achieve one or more of the following:

- ▶ Understand and be able to effectively communicate the concept of sustainability.
- ▶ Develop and use an ethical perspective in which they view themselves as embedded in the fabric of an interconnected world.
- ▶ Become aware of and explore the connections between their chosen course of study and sustainability.
- ▶ Develop technical skills or expertise necessary to implement sustainable solutions.
- ▶ Understand the way in which sustainable thinking and decision-making contributes to the process of creating solutions for current and emerging social, environmental, and economic crises.
- ▶ Contribute practical solutions to real-world sustainability challenges.
- ▶ Synthesize understanding of social, economic, and environmental systems and reason holistically.

Based on voluntary survey responses, the course sustainability inventory indicates that in calendar year 2010, every one of American University's schools and colleges offered courses covering sustainability, including 134 sustainability-focused courses (~3%) and 283 sustainability related courses (~6%).

See the [online sustainability course catalog](#) for a list of these courses.

1.2.2 Research

One hundred AU faculty members (5.7%) reported researching sustainability, including faculty in all six of AU's schools and colleges. A sample of just a few of these self-identified sustainability research topics demonstrates a wide range of interested, including theory and practice in social, ecological, and economic aspects of sustainability.

Sample Sustainability Research Topics

- ▶ Theoretical Quantitative Analysis of Sustainability, Stephen Casey, Department of Mathematics and Statistics, College of Arts and Sciences
- ▶ Sustaining Sustainability: A View from Buddhist Ethics, Jin Park, Department of Philosophy and Religion, College of Arts and Sciences
- ▶ Crop Biodiversity and Agricultural Production in Low Income Countries, Mahmud Yesuf, College of Arts and Sciences
- ▶ Emerging Green-Technology Entrepreneurs: Entrepreneurial Pathways to Growth in the Plug-In Electric/Hybrid Vehicle Space, Stevan Holmberg, Kogod School of Business
- ▶ Environmental Journalism: Scientific, Political, Cultural and Economic Dimensions of Climate Change and Energy Policy, Declan Fahey, School of Communication
- ▶ Local Dreams: Finding Economic, Social, and Environmental Rootedness in the Age of Economic, Social, and Environmental Vulnerability, Robin Broad, School of International Service
- ▶ Environmental Governance Reconsidered: Challenges, Choices, and Opportunities, Robert Durant, School of Public Affairs
- ▶ Environmental and social standards for sustainable development at international financial institutions, David Hunter, Washington College of Law

1.2.3 Sustainability Learning Outcomes

1.2.4 Sustainability Degrees & Programs

American University offers a growing variety of degrees and concentrations in sustainability fields.

- ▶ Environmental Studies, BA
- ▶ Environmental Science, BS
- ▶ Environmental Studies, MA
- ▶ Environmental Science, MS
- ▶ Global Environmental Policy, MA
- ▶ Program on International and Comparative Environmental Law
- ▶ Sustainability Management, MA - Coming fall 2011

AU also offers several sustainability-focused immersion experiences. First, the Natural Resources and Sustainable Development masters degree through the School of International Service sends students to Costa Rica for one year to conduct hands-on sustainability projects and attend the University of Peace. Second, students in the Practice of Environmentalism course take a 10-day research trip to the Galapagos Islands with faculty from three disciplines—environmental science, environmental policy, and film. Finally, the university offers several sustainability-focused Alternative Spring Breaks including a trip to Guatemala which focuses on rebuilding communities in the wake of crises, with specific attention paid to defending human rights and environmental justice.

1.2.5 Sustainability Literacy Assessment

In 2010, the office of Sustainability conducted the university's first student sustainability literacy assessment. The survey was emailed to all resident students.

Based on 401 completed surveys, AU's resident students generally consider themselves to have behaviors that reflect sustainability and they indicate strong interest in learning more about sustainability while at AU. Seventy five percent of survey respondents say their lifestyle reflects their knowledge of sustainability and 60% say their lifestyle has become more sustainable since enrolling at AU. Seventy percent say they want to learn more about sustainability as a student at AU, and 45% say they would take courses or degrees in sustainability if they were offered in their area of academic interest. Thirty percent report having considered sustainability issues when they decided to enroll at AU.

Virtually all students surveyed agreed that "sustainability includes social, environmental, and economic factors." Their rating of important sustainability issues reflects this definition, with "access to health care," "racial equality," and "fair trade" all receiving high indications of importance.

Surveyed students say climate change is the sustainability issue about which they are most knowledgeable, with 75% saying they have a working knowledge or are well versed in the issue. However, only 68% say conserving energy is "very important," and only 38% say carbon offsets are "very important," demonstrating that knowledge about the climate change solutions is trailing behind awareness of the problem – identifying an opportunity for AU to provide education on this issue.

There is a similar disconnect related to clean water. "Access to clean water," was the highest rated sustainability issue, with 91% saying it is "very important." But only 68% say "conserving water" is very important – perhaps indicating a tendency for some students to disassociate their personal behavior with what they believe should be broader environmental priorities.

Overall, AU students report awareness of AU's sustainability programs, demonstrate knowledge of a broad range of sustainability issues, and often adapt their behavior to reflect their knowledge of sustainability. However, some students have yet to fully connect specific behaviors, especially consumption patterns, with sustainability issues such as climate change and access to clean water.

2 Operations

2.1 Buildings

In January 2010, AU President Neil Kerwin issued a Green Building Policy mandating that new construction, major renovations, and operations and maintenance of existing buildings be conducted in conformance with the U.S. Green Building Council's (USGBC) leadership in Energy and Environmental Design (LEED) Silver level at minimum.

2.1.1 Building Operations and Maintenance

AU is participating in the USGBC's pilot program for Volume Certification. Thirty campus buildings are registered in LEED for Existing Buildings: Operations and Maintenance. Efforts are currently underway to certify these campus buildings using this pioneering approach to greening existing buildings. Significant progress has been made in many areas of operations and formal documentation of these efforts is planned to begin in 2011.

2.1.2 Building Design and Construction

The new building housing the School of International Service was designed to achieve LEED Gold certification, making it the university's first LEED-designed building. Certification is expected to be awarded in early 2011.

Major renovation is being planned for the McKinley building, and early plans are targeting LEED Silver certification for new construction.

A new campus plan will be published in 2011 outlining plans for new construction through 2020, including new buildings on the Tenley campus, a new East Campus on the current Nebraska Ave. These new buildings will be designed to qualify for LEED certification.

2.1.3 Air Quality and Tobacco Smoke

Maintaining high quality indoor air is critical to providing an indoor environment conducive to learning. Indoor air quality is currently managed via three complementary systems, and indoor air quality best management practices will be developed and documented according to LEED guidelines:

- ▶ Energy Management System - Four full time staff manage the university's Siemens Apogee energy management system (EMS), which monitors campus HVAC systems, including certain air quality components such as CO sensors, CO2 sensors, and humidity sensors. The EMS is designed to control indoor air quality as well as trigger staff response when the system detects air quality indicators beyond pre-set allowable ranges. The system is monitored 24 hours a day, seven days a week.
- ▶ Occupant Feedback – "2FIX" is the campus-wide customer feedback system for facilities-related inquiries and complaints. Building occupants use this system, which includes a phone hotline and email address (202.885.2FIX and 2FIX@american.edu), to provide feedback on indoor air quality. Calls and emails to 2FIX produce work tickets for response by professional facilities staff people. If/when facilities staff members are unable to resolve an indoor air quality complaint, it is referred to Risk Management for additional inquiry and action.
- ▶ Staff Observation – Facilities staff are trained to observe and act to prevent and/or remediate sources of potential impacts on indoor air quality, such as observing vehicle fumes penetrating a building, visible mold growth, and other such indicators of potential air contamination.

Tobacco smoke is a serious campus air quality concern. Environmental tobacco smoke is a known carcinogen. Smoking tobacco is prohibited inside campus buildings. However, smoking is common around outdoor perimeters of buildings, especially near entryways. Student, faculty and staff attention to this issue has grown. The Office of Sustainability drafted an environmental tobacco smoke policy which proposes prohibiting smoking within 25 feet of building perimeters. The draft has been discussed by various campus stakeholder groups and remains in discussion.

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2.2 Climate & Energy

The university publishes annually collects and publishes a greenhouse gas inventory. The most recent inventory, covering FY 2010, indicates that half of the university's emissions stem from the purchased electricity. Another third are from travel (commuting, study abroad, business travel). And the remaining emissions are from natural gas, paper purchasing, and waste sent to landfill.

In May 2010, AU published its climate action plan, outlining four strategies, each with a variety of tactics, to achieve carbon neutrality by 2020 at no net financial cost to the university. The complete plan is available online at:

<http://www.american.edu/loader.cfm?csModule=security/getfile&pageid=1812784>.

Significant progress has already been made and more actions are planned for 2011.

2.2.1 Reduce consumption

Facilities Management (FM) installed electricity meters in the majority of campus buildings and launched an interactive energy dashboard being displayed on flatscreen monitors in many building lobbies and office suites. Using the Energy Star portfolio manager, FM began benchmarking individual building energy consumption against national averages for similar building types. In November, 2010, AU participated in the inaugural Campus Conservation Nationals energy conservation competition which kicked off with a "Do It in the Dark" campaign in the residence halls. During the 19 day competition, residence hall occupants reduced consumption by an average of 8%, conserving over 34,000 kWh of electricity and saving the university more than \$4,000.

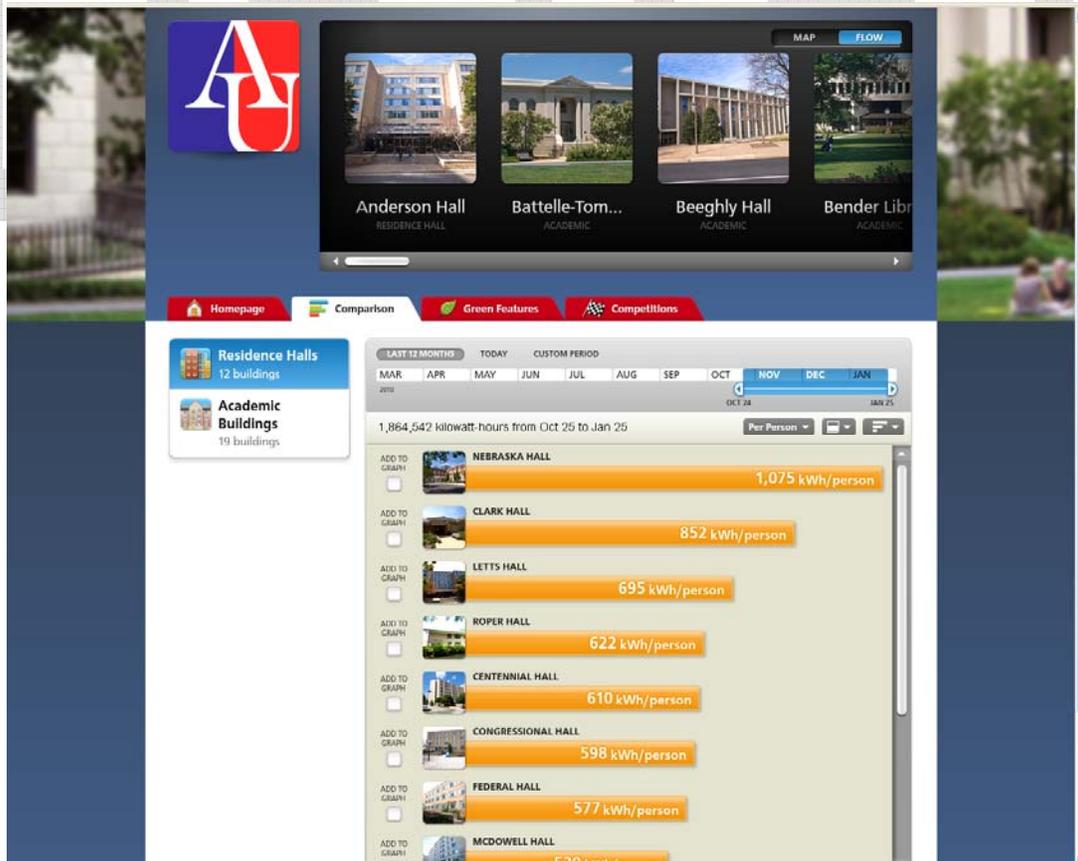


Figure 1 – AU's new Energy Dashboard will be displayed on building monitors across campus.

Energy saving practices and products already in use on campus include:

- ▶ The university operates a computer-based Building Automation System (BAS) that monitors and optimizes building control subsystems, including lighting, heating, cooling, ventilation, equipment scheduling, and alarm reporting;
- ▶ The BAS is used to program times for temperature ranges in classrooms - when a room's temperature goes outside the set range, a facilities operator is alerted and dispatched to the site to take any action needed (like closing a window, for example) to return the temperature to the normal range;
- ▶ Lighting sensors in classrooms, offices, hallways and restrooms that turn lights on when people enter and turn them back off when people leave; Motion sensors are also used on faucets in many locations around campus to conserve water;
- ▶ LED lights are installed in the new School of International Service garage and are the new standard for walkway lamps;
- ▶ 73 campus vending machines were replaced by models with energy management systems that reduce lighting and power when customers are not present;

In 2011, FM will conduct energy audits in 30 campus buildings and invest at least \$500,000 annually for the next two years implementing the best energy conservation and efficiency practices identified by the audits. A preliminary list of energy conservation and efficiency projects includes:

<u>Location</u>	<u>Potential Project</u>
Campus Wide	Feasibility study GSHP - South Campus Initial design GSHP - South Campus Change Washington Standard heads to LED heads
Anderson Building	Reduce and relocate hallway lighting
Battelle-Tompkins	Add occupancy sensor in hallways
Bender Library	Reduce number of light fixtures and change to 4100 Kelvin Install waterside economizer system for free cooling (energy savings) Upgrade ventilation for control by new CO2 sensors Install OA VFDs in place of current constant volume drives on AHU 1 & AHU - 2 Replace constant volume drives with VFDs on AHU 1 & AHU - 2 supply fans Replace AHU - 3 with VAV system Install occupancy sensors in offices, conference rooms and admin areas Establish night setback for stack area lighting
Brandywine Garage	Change lighting to LED's
Butler Pavilion	Replace 3.5gpf toilets with 1.6gpf
Centennial Hall Garage	Change lighting to LED's
Congressional Hall	Install variable speed drives to the two 15 hp water pumps
Grounds	Replace Light poles with LED between McKinley and Library Install "solar powered" exterior lighting under Crepe Myrtles at McKinley Replace light poles at Capital and Congressional with Washington LED Standard Retrofit Washington globe fixtures with LED Replace shoebox lights with Washington globe LED Fixture

Hughes Hall	Retrofit 75% of dorm rooms and stairwell light fixtures to T8
Katzen Arts Center	Install LED fixtures in Parking Garage
	Install water side economizer and a system to capture waste heat
Mary Graydon Center	Absorption chiller or high efficiency reciprocating chiller in Mechanical room
Sports Center	Install occupancy sensors and switching in general locker rooms
	Install LED fixtures in Parking Garage
	Upgrade garage and tunnel lighting to LED's
Vehicle Maintenance Shop	Replace lighting fixtures with LED's
Ward Circle Building	Install occupancy sensors on four levels

2.2.2 Produce renewable energy on campus

In December 2010, the university contracted construction of the largest solar photovoltaic and largest solar thermal (hot water) systems in the Washington metropolitan area, both of which will be installed on campus by the end of July 2011. The systems are expected to produce approximately one percent of campus energy needs.

Plans are also underway for these additional small scale renewable energy projects:

- ▶ integrated thin-film solar roofing system on the Sports Center
- ▶ 10 kW vertical-axis wind turbine on Mary Graydon Center parking garage
- ▶ 10 kW cogenerator fueled by used cooking oil from the Terrace Dining Room

2.2.3 Purchase green power

In May, 2010 the university began sourcing renewable energy certificates, produced by the Langdon Wind Energy Center in North Dakota, equivalent to 100% of the university's purchased electricity, thereby mitigating half of the university's emissions.

In 2011, the Office of Sustainability will pursue opportunities for the university to source regionally-produced green power for all electricity.

2.2.4 Offsets Remaining Emissions

In 2010, New Student Programs invited incoming students to voluntarily offset their air emissions by contributing to a campus sustainability fund. The response was positive and the practice will be continued in 2011.

In 2011, the Office of Sustainability will work to institute a broader air emissions policy and will develop plans to mitigate all remaining emissions through a mix of local, regional and international carbon offset projects. Projects already under exploration include home weatherizing, tree planting, and landfill gas.

2.3 Dining

The University is committed to providing healthy, sustainable and delicious food to the campus community. Many specific programs and offerings contribute to this commitment and plans are underway to further advance sustainable food services on campus.

Activities in 2010 include:

2.3.1 Sustainable Food Purchasing

Between 25%-36% of campus food sourced by Bon Appetite is sustainable¹, meeting one or more of the following criteria: grown and processed within 250 miles of campus; certified USDA Organic, Marine Stewardship Council, Food Alliance, or Fair Trade.

2.3.1.1 Vegetarian and Vegan Dining

A station in the Terrace Dining Room is dedicated to protein entrees that include tofu, seitan, and tempeh, legumes and vegetables, available at every meal. AU routinely wins recognition for its vegetarian and vegan food from People for the Ethical Treatment of Animals - in 2008 earning "Most Vegetarian-Friendly University in the United States," and in 2009, placing third for "Best selection of Vegetarian Cuisine", and in 2010 placing second in for "Most vegan-friendly college" in the small school category.

2.3.1.2 Trans-Fats

In 2004, Bon Appétit, AU's dining service provider, became the first food service company to use a non-hydrogenated canola oil throughout all of their operations. They also avoid products with transfat and their suppliers identify transfat-free products to make it easier to source them.

2.3.2 Reducing Dining Waste

This increasingly popular food waste reduction technique was piloted at AU in 2009 and is now standard practice, reducing food waste by an estimated 27,000 lbs/semester (32% per person), and avoiding washing for 174,000 dishes/semester plus the trays themselves.

Both pre- and post-consumer food waste is composted from dining services located in the Mary Graydon Center, as well as the student-run Davenport Lounge in the School of International Service.

AU's dining services donate food to DC Central Kitchen and Capitol Area Food Bank. Additionally, produce from the campus organic garden is donated to Bread for the City, a local food bank.

"One of our top schools over the past several years, AU is representing 'the District' proudly with vegan options worthy of national praise ... it's really the desserts that put AU head and shoulders above the rest ... students can enjoy vegan raspberry marble cheesecake with chocolate crust, vegan fudge, and vegan chocolate coconut-cream pie, just to name a few of the many options available. **Ah, being an AU student—how sweet it is!**"

People for the Ethical Treatment of Animals, 2010

¹ 25% of food qualifies as sustainable using weighted values in LEED for Existing Buildings: Operations and Maintenance; 36% qualifies using weighted values in STARS 1.0.

Dining Services uses Green Seal certified paper napkins comprised of 100% recycled materials, including 40% post-consumer recycled content.

Campus coffee shops, the Davenport Café and Einstein's Bagels, both offer discounts to customers who use a refillable mug. The Davenport Café even provides free reusable to-go mugs for customers to take away and return at their convenience.

Bon Appetite donates surplus food to the DC Central Kitchen and the Capital Food bank, especially just before campus shut downs when fresh produce, dairy, and proteins are donated.

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2.4 Grounds

2.4.1 Integrated Pest Management

The university's grounds department uses Integrated Pest Management (IPM) for all grounds owned and maintained by the university. An IPM plan outlines strategies for: preventing pests by using cultural methods; monitoring and identifying pests using the university tree inventory; determining action thresholds using weekly IPM reports from the University of Maryland Cooperative Extension Service; and applying least toxic chemicals as a last resort.

2.4.2 Arboretum

The AU campus is a registered arboretum, filled with native and adaptive plants. In 2010, a total of 132 new trees were planted and added to the campus arboretum. AU is the first campus in Washington D.C. to be designated a Tree Campus USA, and is also certified as Wildlife Habitat by the National Wildlife Federation. Campus landscape choices help provide food (e.g. berries, nectar, sap, pollen, and foliage) and water (rain gardens, bioretention ponds, a reclaimed stream) for wildlife. Shelter for wildlife is provided by wooded areas, rock walls, dense shrubs, evergreens, burrows, and a pond. Mature trees, host plants, and water features provide wildlife with habitat and resources for raising their young.

2.4.3 Campus Beautification

Every April, the AU Grounds department organizes Campus Beautification Day. Each year this event gathers more than 300 volunteers, bringing faculty and staff out of their cubicles and students out of their residence halls for a community-wide effort to enhance the university's Arboretum and Public Gardens—the only university arboretum in Washington, D.C.

Volunteers spend the day planting native and adaptive trees and shrubs, mulching, weeding, and building rain gardens and other stormwater-management landscape features. The event has also drawn participation from neighboring Horace Mann elementary school, alumni and neighborhood residents.

2.4.4 Water-Saving Irrigation

A weather-informed irrigation system saves water campus-wide. In 2010, AU's grounds management took water conservation to a new level when the School of International Service (SIS) building site was approved to pilot the Sustainable Sites Initiative, a new international program designed to foster and recognize sustainable grounds management. Techniques employed at the SIS site include: a xeriscape design that avoids artificial irrigation; rain water capture and reuse from the roof; mulching; use of native plants; lawn area reduction; vegetated roofs; bioretention ponds; bioswales; and composting.



2.4.5 Snow and Ice Removal

Hand shoveling and brush-sweeping reduce the use of gas-powered snow removal equipment. Magnesium chloride (MgCl) is used as an alternative to sodium chloride (NaCl) for ice melt. Studies show

that compared to NaCl, MgCl has considerably lower likelihood of harming wildlife or contaminating waterways².

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² Lewis, W.M., "Studies of Environmental Effects of Magnesium Chloride Deicer in Colorado." Colorado Department of Transportation Report CDOT-DTD-R-99-10, Denver (November, 1999)
<http://www.dot.state.co.us/publications/PDFFiles/magchlorideeneffects.pdf>

2.5 Purchasing

In 2010, university President Neil Kerwin issued AU's Sustainable Purchasing Policy. The policy sets forth sustainable purchasing guiding principles and requires the formation of a sustainable purchasing team responsible for developing sustainable purchasing guidelines for a set of prioritized goods and services.

The Guiding Principles are:

- ▶ Utilize procurement to act on the University's values of social responsibility and environmental sustainability;
- ▶ Support the University policy of striving to produce zero waste, by reducing overall consumption and shifting to products with reduced product lifecycle impacts;
- ▶ Support the University commitment to eliminate and offset our greenhouse gas emissions;
- ▶ Consider total cost of ownership, rather than low purchase price, when evaluating the financial competitiveness of procurement contracts;
- ▶ Require sustainability standards and certifications whenever they are available, with preference for those which are developed by third-parties through balanced stakeholder processes, and which are independently verified throughout a product's chain of custody;
- ▶ Continuously improve sustainable purchasing practices; and
- ▶ Serve as a model of sustainable purchasing to our community of consumers and suppliers.

The prioritized goods and services are:

- ▶ Beverage water
- ▶ Computers and other office electronics
- ▶ Furnishings, Fittings, & Equipment
- ▶ Office paper
- ▶ Printing Services
- ▶ Cleaning products (see Green Cleaning Policy)
- ▶ Energy Star-rated products
- ▶ Ink and toner cartridges
- ▶ Office supplies

2.5.1 Beverage Water

The university hierarchy of preferences for beverage water is to first promote and facilitate the use of clean, low-cost, convenient tap water. Three water fountains were retrofitted with "bottle fillers" as a pilot. In 2011, 98 additional water fountains are scheduled to be retrofitted with these convenient bottle fillers. Signage will be posted at water fountains promoting the safety and highly-rated aesthetic qualities of campus tap water.

In numerous instances, campus users continue to drink water that is refiltered at the tap, so an effort began in 2010 to replace traditional water coolers with inline water filter stations. These inline systems refilter tap water rather than relying on delivery of bulk bottled water.

Numerous indoor and outdoor events which have traditionally relied on single-use bottled water have successfully switched to sports-cooler dispensed tap water poured into compostable cups and/or reusable water bottles. For example, Campus Beautification Day was conducted without the use of disposable single-use bottled water.

Efforts are ongoing to eliminate traditional bulk water coolers and single-use disposable bottled water.

2.5.2 Computers

All new desktops and laptops purchased in 2010 were EPEAT certified, 82% of which were EPEAT Gold rated and 18% of which were EPEAT Silver rated. Additionally, an electronics reuse and recycling protocol was established so that the university first redeploys electronics for internal reuse and then,

when necessary, sends electronic waste off campus for external reuse and/or recycling by Second Solutions.

2.5.3 Cleaners

The university's housekeeping contractor, Aramark, sources cleaning chemicals and janitorial supplies. The contract stipulates housekeeping services which conform to standards outlined in LEED for Existing Buildings, Operations and Maintenance. Cleaning supply tracking for calendar year 2010 demonstrates that 99% of eligible janitorial cleaning products (chemicals, can liners, and paper products) used by Aramark are Green Seal certified.

In 2011, further inventorying will track cleaning equipment (vacuums, mats, mops) in addition to janitorial cleaning products. Also, Aramark will complete a test of ionized water as a cleaning fluid to replace chemical cleaners.

2.5.4 Furnishings, Fittings, & Equipment

The American University Design and Construction Standards committee is responsible for incorporating sustainability criteria into updated university standards for furnishings, fittings and equipment. Standards already being specified include BIFMA Level, Cradle to Cradle, Energy Star, Forest Stewardship Council, GreenGuard, GreenSeal, and WaterSense. In 2011, the university's product standards will be updated to integrate these sustainability standards.

2.5.5 Office Supplies & Printing

Office copy paper is being transitioned to recycled content paper. Actuals from 2010 and goals for 2011 are outlined in the below table. Additionally, goals will be developed for reducing total paper consumption by broadening the adoption of default duplex printing, reusing paper printed on one side, and converting paper forms to electronic formats.

% recycled	2010	2011
0%	54%	10%
30%	31%	70%
50%	1%	
100%	14%	20%

Every major SKU of OEM ink and toner products available through the campus Staples catalog was replaced with an equivalent remanufactured SKU in order to reduce the university's upstream resource intensity. Additionally, a cartridge-less "solid ink" printer was piloted and in 2011 the pilot office will determine whether to pursue this lower-waste technology to replace existing printers. The Office of Sustainability will continue to work with Procurement and Contracts to replace other office supply products with more sustainable options available through Staples' Ecoeasy program. Likewise, University Publications and other stakeholders will be consulted to track printing services and develop sustainability standards for these services.

2.5.6 Vendor Code of Conduct

American University has been affiliated with the Fair Labor Association (FLA) and the Worker Rights Consortium (WRC) since November 2000, in an effort to take leadership in addressing human rights and worker rights abuses in the apparel industry. Both organizations collaborate with workers, non-governmental organizations, and other colleges and universities to improve the conditions of workers producing collegiate apparel by using the leverage of licensing agreements. AU's affiliations with the

FLA and WRC require the university's licensees and/or sourcing companies to meet a code of conduct that is consistent with FLA and WRC codes.

In 2010, the campus store began carrying apparel sourced from Knights Apparel Alta Gracia factory, which has been praised for its leadership in developing a business model that provides a living wage and other benefits for its apparel workers in the Dominican Republic.

2.5.7 Disadvantaged and Local Businesses

AU policy requires 35% participation by certified business enterprises (CBE - the District of Columbia's program for designating local, small and disadvantaged businesses) on facilities contracts worth \$500,000 or more. For contracts below \$500,000, AU's strives to achieve a goal of 35% participation by CBEs. To count toward the 35% requirement and goal, the contractor or subcontractor has to be certified with DC and listed in the searchable database of certified businesses found here:

<http://lsdbe.dslbd.dc.gov/public/certification/search.aspxsets>.

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2.6 Transportation

Transportation activities account for the large portion of greenhouse gas emissions at American University, and contribute to local air pollution and traffic congestion. This plan establishes aggressive benchmarks that seek to reduce the number of trips and/or vehicle miles traveled as well as reducing emissions associated with necessary travel.

2.6.1 Campus Fleet

The campus fleet is comprised of 75 vehicles, including 10 shuttle buses. A dozen of these vehicles are all-electric or gas-electric hybrids and two vehicles are fueled with B20 biodiesel. In 2011, the Office of Sustainability will work with Grounds and Transportation to develop plans to convert fleet vehicles to lower emitting technologies by utilizing the GREET Fleet Footprint calculator.

2.6.2 Commuting

Market-based parking fees combined with an increasingly popular array of alternative transportation modes and incentives have lead to steady declines in campus commuting miles. Programs offered to reduce campus commuting include:

- ▶ Bicycle commuter incentive
- ▶ Bicycle lockers and showers
- ▶ Bicycle lending – a free program run by students
- ▶ Bicycle sharing – in partnership with the District Department of Transportation, AU campus now hosts 15 bikes in Capitol Bikeshare, the nation’s largest bikeshare program
- ▶ Free shuttle buses with routes between Tenleytown metro and Tenley Campus, main campus and Law campus
- ▶ Zipcar car sharing – three Zipcars are provided with preferred campus parking locations
- ▶ Zimride ride carpool matching and sharing, registered carpoolers are eligible for discounted parking rates

2.6.3 Business Travel and Study Abroad

In 2011, the Office of Sustainability will explore carbon projects to offset unavoidable business travel and study abroad travel.

2.6.4 Flexible Work & Telecommuting

In 2010, the university adopted a formal flexible work policy allowing for condensed work week schedules. In 2011, the Office of Sustainability will explore opportunities for adopting a telecommuting policy that would reduce campus commuting and limit campus office space requirements.

2.7 Waste

In 2010, university president Neil Kerwin issued a Zero Waste policy mandating the creation of a plan to divert all waste from landfill.

For the first time in spring 2010, AU participated in RecycleMania, a national waste reduction and diversion competition. AU was proud to place 3rd overall out of more than 600 colleges and universities participating in the competition. The university's overall waste diversion rate was an impressive 63 percent.

Construction and demolition waste from the new School of International Service was diverted from landfill and new practices are being developed to divert campus renovation waste from landfill.

In 2010, significant strides were made in diverting waste from landfill by developing an offsite composting program. In addition to yard waste, which has been composted since 2007, all pre- and post-dining food waste from the Terrace Dining Room is now diverted for composting. In the fall, student Green Eagles, coordinated by the Office of Sustainability, conducted waste audits in Anderson, Centennial, Clark, Letts, and Roper halls. As a result, a plan was developed to divert restroom paper towels from landfill by rerouting them to composting. This program is set to begin in February 2011. Likewise, an independent group of students worked with Grounds and Housekeeping to begin composting coffee grounds from the Davenport Lounge.

A comprehensive Zero Waste plan is in development and will be published in 2011.