



March 3, 2011

Dear Community,

The Climate Action Team presents its first annual review of the College's progress on the Climate Action Plan. When we say "College" we mean you! You have taken steps this past year to reduce our campus footprint and to bring the liberal arts to bear upon this seminal issue. No matter what hat you wear on this campus, this Plan is yours.

In fall 2007, the staff, faculty, and students who served on the College's Greenhouse Gas Emissions Reductions Task Force began work on a Climate Action Plan to fulfill our commitment to carbon neutrality. President Sandy Pfeiffer formalized this pledge when he became a founding signatory of the American College and University Presidents Climate Commitment (ACUPCC) earlier that year.

The community vetted the draft Climate Action Plan in early 2008, suggestions were incorporated, and the document was filed with the ACUPCC in September 2009. Strategies for fulfillment of our goals were immediately launched campus wide with particular emphasis upon curbing energy use and transitioning to renewable energy sources.

We promised the Climate Action Plan would be a *living document*. We committed to undertake an annual review of our actions, measure results, and adjust the plan as needed.

The Climate Action Team, and other campus implementers, have conducted the first annual review of the goals set forth on pages 23 to 42 of the full Climate Action Plan (<http://www.warren-wilson.edu/~elc/sustainability/index.php>). We report on progress since the start of the 2009/2010 academic year. You will find an introductory summary and interesting data on pages 30 to 33 provided by the Campus Greening Crew. Progress is highlighted in yellow and actions that will no longer be pursued are in red.

What did we miss? Email me your updates and your suggestions and they will be included.

Thanks to all,

Margo

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Executive Summary

If the next generation of citizen leaders is to be engaged and committed to leading for the common good, then the institutions which nurture them must be engaged in the work of the society and the community, modeling effective leadership and problem-solving skills, demonstrating how to accomplish change for the common good. This requires institutions of higher education to set their own house in order, if they expect to produce students who will improve society.

from the Kellogg Report, "Leadership Reconsidered: Engaging Higher Education in Social Change," *A. W. Astin and H. S. Astin, 2000*

Climate Action Plan Goals

- Reduce greenhouse gas emissions 80% by 2020
- Attain carbon neutrality at a date to be determined
- Measure progress against baseline year 2007/2008
- Reduce greenhouse gas emissions by 30% by July 1, 2015, especially by meeting specific reduction goals in the following areas to result in this 30% reduction target:
 - By July 1, 2015 reduce conventional electric kilowatt usage by 25%
 - By July 1, 2015 reduce natural gas usage by 20%
 - By July 1, 2015 reduce total transportation emissions footprint by 50% (campus fleet, International Programs, employee and student commuting)

Results for 2009/2010

- End of year results for 2009/2010, compared to the baseline year of 2007/2008:
 - 8% reduction in greenhouse gas emissions without incorporating calculations from carbon offsets or renewable energy credits (Warren Wilson purchases 100% of the kw value of its annual electric use from wind farms each year as part of its ACUPCC commitment). This reduction comes primarily from a significant reduction in the transportation emissions footprint.
 - @18% reduction in greenhouse gas emissions using purchased carbon offsets and renewable energy credit calculations (this is permissible re international standards)
- Kilowatt usage for 2009/2010 compared to baseline year of 2007/2008: up 6.4%
- Natural gas use for 2009/2010 compared to baseline year of 2007/2008: up 6.1%
- Transportation emissions footprint for 2009/2010 compared to baseline year of 2007/2008: down @53% because of reduction in international travel miles and commuting

Hopeful trends year to date in 2010/2011

- Year to date electric usage is 3% less than year to date 2007/2008
- Year to date natural gas usage is 8% less than year to date 2007/2008.

For greater detail, see tables on pages 30 to 32.

The Campus Greening Crew is responsible for developing the analysis of the numbers and the annual greenhouse gas emissions inventory using data logged into our Energy Star software by the Energy Services Crew. Thanks to both crews for providing vital support for the Climate Action Plan.

2009/2010 Climate Action Plan Annual Review

From pages 23 to 42 of the Climate Action Plan

Climate Action Plan Strategies

What is it that is causing us to systematically emit ever more CO₂ into the atmosphere? It is the same thing that causes us to emit more and more of all kind of wastes into the biosphere, namely our irrational commitment to exponential growth forever on a finite planet subject to the laws of thermodynamics. If we overcome the growth idolatry we could then go on to ask an intelligent question like, "How can we design and manage a steady-state economy, one that respects the limits of the biosphere?" Instead we ask a wrong-headed, growth-bound question, specifically; "By how much will we have to increase energy efficiency, or carbon efficiency, in order to maintain customary growth rates in GDP?"

excerpt from economist Herman Daly's keynote address at Headwaters Gathering, Warren Wilson College, March 2009

I. Behavior Change

Greenhouse Gas Emissions Task Force, Environmental Leadership Center, Dean of Student Life, Campus Bookstore, Presidents Advisory Council, Water and Energy Efficiency Crew, Work Program

Overall

- Conduct behavior change surveys prior to the development of the Climate Action Plan and throughout the implementation phases to inform strategies and support successful outcomes. The behavior change survey was constructed and everyone on campus was invited to fill it out on-line. There was a strong community response. We used the results to inform our choice of strategies to encourage behavior change. Results indicated that the WWC campus community is willing to reduce energy use and, above all else, that it requests information/education about campus energy use and how to reduce use, and feedback regarding the success or lack of success resulting from energy reduction efforts and feedback regarding other campus efforts to reduce energy use as well.
- Hold focus groups during the year to monitor progress and community consciousness. Focus groups were not held, though members of the campus community willing to participate were identified and several strategic information sessions were held with Caucus, Res Life, and many environmental studies classes.
- Appoint campus-wide "Climate Action Ambassadors." In process spring 2011.
- Brand the Climate Action Plan as the "Give A Hoot" campaign, building on the significance of Warren Wilson's mascot – the owl. Logo was created and used on all Climate Action related communications.

- Consider enrolling community in pledges or commitments. Climate Action Rally in Fall 2010 enlisted pledges to behavior change and campus champions.
- Create ongoing communication tool for the community to recommend new behavior change strategies. Climate Action Tips were published every 3 weeks via campus email and the Inside Page.
- Recognize and reward results. Dorms that reduced energy use the most in a given month compared to usage the previous year were recognized and awarded food. Building managers of non-residential buildings that reduced significantly were also recognized. The Dorm Energy Challenge was instituted.
- Conduct on-going behavior change education/Campus Greening Crew conducted energy related film showings (Oil on Ice, Kill-A-Watt Hours), conducted an Energy Awareness day; brought a ton of coal to campus in a dump truck and parked it outside the cafeteria to educate the community about the coal required for 9 hours of College electricity use.

Faculty Climate Action Team member included 3 elements of sustainability in her crew expectations and evaluations (reuse, reduce, recycle; electricity use; self-sustainability) and encouraged the crew to consider these 3 every day. Some faculty report they are infusing examples and problems in homework and exams that pertain to climate change in their courses.

- Publicize and promote use of the Green Event Guide, Green Office Guide, and Green Living Guide campus-wide and ensure all division leaders work toward positive choices for events and purchases. Yes, ongoing promotion. The Green Event Guide and the Green Office Guide were combined, revised and re-released as the Sustainable Practices Guide; the Green Living Guide was updated.
- Work with Residential Life Staff to develop strategies for Climate Action success. Work begun (see below), but action plans not yet executed.

First Year Orientation

- Distribute cfl's, orient new students to the Climate Action Plan, and provide material to support the "Five Ways to Green Your Dorm Room" at first year dorm check-in. Yes, completed on move-in day for first-years.
- Provide Green Walkabout for all new staff, faculty and students to introduce them to best practices campus-wide and orient them to the Climate Action Plan. Yes, completed during orientation week.
- Conduct evening skits for new students during Orientation Week on responsible/sustainable decision-making, "Greening Your Room," recycling, and more. Yes, completed during orientation week.

Residential Life

- Develop model dorm room. Completed for four dorms in Stevenson, EcoDorm, Village A and B.
- Make energy audits available for dorm rooms. Completed for one room in each of the four dorms as a model for other students to emulate.

- Make a YouTube “Green Dorm Room” Video. Not accomplished yet.
- Limit use of personal dorm refrigerators. Encouraged but not monitored.
- Make clotheslines accessible for all dorms. Completed via a Work Day initiative where 12 clotheslines were installed at dorms.
- Conduct dorm energy challenges. Accomplished with limited success. To support this effort this year, the Blacksmith Crew has forged the House Energy Cup to be awarded to the residence hall with the most significant reduction.
- Conduct a “Layers are Awesome” fashion show as part of the “Turn Down the Heat” initiative. Planned for Fall 2011.
- Educate about social justice issues related to energy use. Fifteen courses participated in INSULATE days and immersed themselves in this issue; addressed by the Sustainability Film Series launched in 2010-2011, led by the Campus Greening Crew in partnership with Multicultural Affairs, RISE Project, Spiritual Life and others, continues to address these issues.
- Conduct “Phantom Load Duty” as part of nightly dorm rounds. Presented to RD’s but not yet executed. Spring 2011 plan will identify one RA from each dorm to serve as a Climate Ambassador and help with this type of programming.
- Conduct “engagement programs” to build strong community around a sustainability ethos: Some of the following did occur through various Triad activities.
 - Adopt a garden plot
 - Hold community bike rides to service projects
 - Provide activities that connect with the natural world
 - Engage in sustainability-focused service projects
 - Buy dorm snacks/food that support sustainability values
 - Conduct 'Fix Your Stuff' workshops to help students learn how to keep things operable and cut down on waste/consumption

Tools to Encourage Campus Participation

- Educate students by conducting a dorm room energy audit of RA/RD rooms to establish them as demonstration sites for best energy practices for residents. Accomplished in 4 dorms.
- Provide Dorm Energy Use workshop for early dorm-wide meeting. Accomplished in 4 dorms.
- Launch a campus-wide education campaign in the fall of 2009 – “Five Things You Can Do” – and brand the campaign with a slogan and a logo campus-wide. Posted in all dorms, notices in bathrooms, meetings with RDs, and promotion via Student-L and at Climate Action events.
- Develop a Climate Action website in Phase 1, with updates on progress, resources for change, real-time monitoring display, personal carbon calculator, and quarterly building reports. Website completed and linked from the Sustainability website and the Environmental Leadership Center website. Real-time monitoring not yet live but in place in Sage.
- Create a central campus “thermometer” display with high community visibility to track progress. Not deemed valuable.
- Post bi-weekly “GHG” comic strip in bathroom stalls. Not yet launched.

- Market alternative transportation options. Promoted ZimRide and bus use as part of Tips of the Week.
- Post Climate Action “Tip of the Week” on the College’s Inside Page. Changed to a monthly posting.
- Distribute quarterly energy use report for every campus building. Yes, via building managers and RDs on line.
- Make energy trend usage information easily available to the community. Yes, via building managers, RDs, and Climate Action website.
- Encourage Work Supervisors to work with their crews to research and adopt best practices. Yes, via quarterly appearances at FMTS meeting and Work Supervisor retreat presentations.
- Partner with the Sustainable Foods Policy Task Force to reinforce selection of low-impact food choices. Climate Action Team member read and commented on policy. Campus Greening Crew prepared to address food carbon footprint at some point.
- Ensure Campus Store sells cfl’s and powerstrips at reduced cost and is supported to make sustainable purchasing choices. Accomplished! They were sold at cost. Nebraska Books, new campus store provider, has committed to adopt sustainable purchasing choices wherever possible.

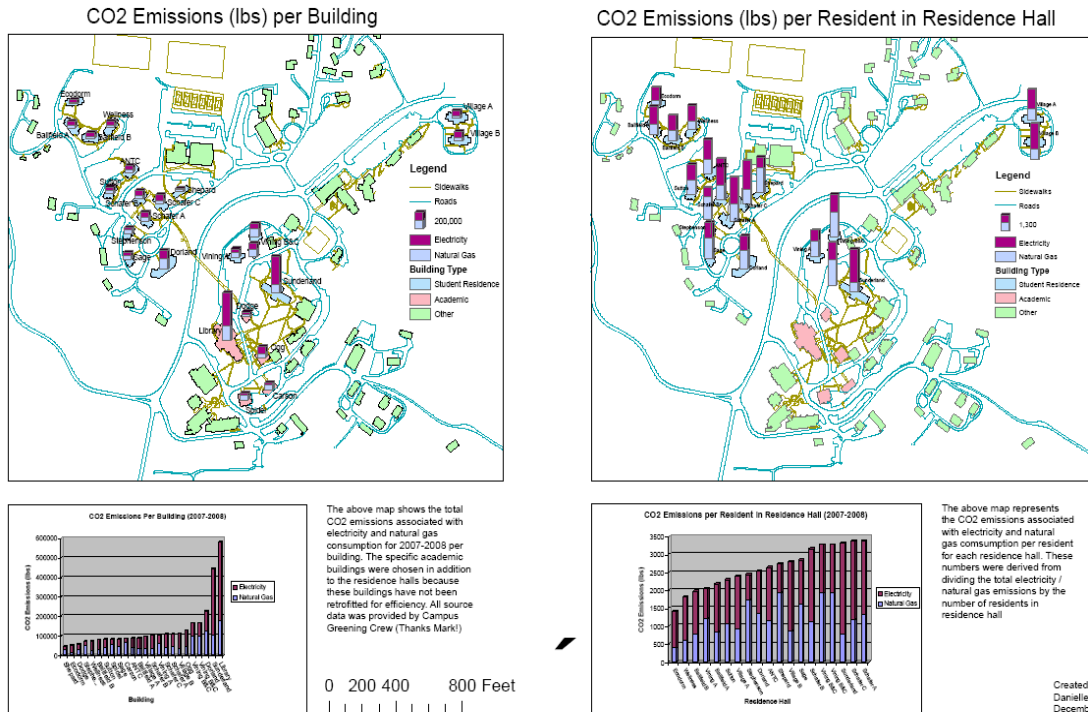
II. Campus Operations

Director of Facilities Management and Technical Services, Director of Recycling and Waste Management, Purchasing, Computer Services, Campus Bookstore, Auto Shop, International Programs, Land Managers, Forestry Program, Sodexo Dining Services, Land Use Committee, Buildings and Grounds Committee, Sustainable Foods Task Force, GHG Task Force, GIS Crew, Environmental Leadership Center, Water and Energy Efficiency Crew

Built Environment

Nearly 30% of Warren Wilson’s core campus buildings are LEED certified or have green features. Many buildings are in need of energy efficiency improvements.

CO2 Emissions at Warren Wilson College (July 2007- June 2008)



Built Environment

Goals for 2009/2010: *The original goals provided below were set prior to the completion of our Campus Built Environment Energy Plan. For this reason, the goals are listed below, but were not executed. The actual goals for 2009/2010 and their fulfillment status follow this list:*

- Experiment with temperature setbacks in buildings in evenings and during break for all buildings capable of this action
- Regulate zone temperature in buildings with wide temperature disparities. See above.
- Use infrared camera and blower door tester to continue to inspect individual campus buildings for insulation needs as part of a 10-year program, starting this year with College rental properties
- Conduct light bulb audit of campus and relamp incandescents to cfl's or LED's .
- Consider participation in Progress Energy's delamping program.
- Conduct campus-wide investment grade audit to search for greater efficiencies
- Gradually retrofit targeted high usage buildings with possible engagement in performance contracting to make the retrofits affordable.
- Install real-time monitoring in as many buildings as possible using the grant-funded circuit board and visual displays secured by a Warren Wilson student.
- Document cost of all energy-saving changes to the built environment to measure return on investment re energy performance and cost.
- Include facilities long-term needs in strategic planning process.
- Retrofit all college rental properties to align them with the mission and values of the Climate Action plan as part of a 10-year program starting this year

Revised Goals for 2009-2010

- Core Campus:
 - Develop an Energy Plan for the Built Environment. Status: Plan is 90% complete.
 - Determine a priority for energy audits based upon energy intensity, type of building, and remaining life of the buildings. Status: Complete.
 - Perform an ASHRAE Level II Energy Audit for Carson. Develop a standardized format and training program for all future audits. Status: Audit is 75% complete. Still need to finish all standardized forms, and finalize training.
 - Perform an ASHRAE Level II Energy Audit for Devries Gym. Status: Was not performed. However, Waste Reduction Partners performed an audit on Devries along with Ogg, Bannerman and FMFS.
 - Complete audits already started along with recommendations for implementation and payback. Status: Incomplete
 - For all new major renovations, implement robust energy efficiency measures. Status: Four major renovations occurred this past year: Stephensen Hall basement: student rooms and bathrooms for 7 students), Ellison Library two study rooms), Gladfelter (4 zones in the basement), Sunderland (bedroom and bathroom renovations for 14 students). High performance windows, extremely tight envelope construction, and Heat Recovery Ventilators were installed where appropriate. Digital controls were installed in all locations.
 - Buildings with existing Direct Digital Controls: Implement night and holiday temperature setbacks. Status: Complete. An automatic reminder is sent out via the work order system before every break to ensure unused zones are scheduled as unoccupied.
 - Develop a comprehensive Lighting Audit program. Status: Many preliminary lighting audits have been started, but not fully completed.
 - Develop a comprehensive Water Efficiency Audit program compliant with LEED for Existing Buildings: Operation and Maintenance. Status: Carson, Devries, Morse and Stephenson water audits are 90% complete.
 - Perform a night time mid winter infrared survey of all core campus buildings. Status: Not started. An undergraduate research project was developed, but not approved by Academic Affairs.
 - Develop and implement a real time monitoring program. Status: The monitoring board is 95% functional, and Sage electrical is being monitored.
 - Develop a funding strategy for implementing energy efficiency and related deferred maintenance projects:
 - Consider the use of an ESCO to implement Energy Efficiency retrofits. Status: Not being considered at this time. Instead, we plan on performing in-house audits.
 - Consider alternative funding mechanisms for energy efficiency projects. Status:

- Obtained approval from the Business Office to use unexpended, budgeted energy revenue at year-end for energy and water efficiency projects.
 - Working with Progress Energy to maximize our potential for rebates. \$1500 has been submitted for rebates.
 - Working on relationship with local engineering firm to oversee in-house audits by students, and still recoup most of the rebate for the college.
 - Develop 5 year masterplan for built environment deferred maintenance, including energy efficiency projects. Status: 5 year plan is in place for major known issues. However, extensive evaluations of every building still required.
 - Develop a plan for retaining a full time Energy Services Supervisor. Status: A federal grant and internal funding are being considered for this year's candidate.
- Rentals:
 - Develop an Energy Plan for the Rentals
 - Develop a funding strategy for implementing energy efficiency and related deferred maintenance projects:
 - Consider alternative funding mechanisms for energy efficiency projects. Status:
 - Get Rentals under the Commercial – not Residential Energy Efficiency Program (Commercial rebates are much more robust). Status: Started working with Renters to gauge their response to paying electric bills to the college in lieu of directly to Progress. This would qualify us for the commercial program. 10% complete.
 - Complete existing rental house audits: Status: Incomplete.
 - For all new major renovations, implement robust energy efficiency measures. Status: 112 North Lane and 114 Cabin Hill received extensive renovations. All energy efficiency measures possible were implemented: Lined crawl spaces, foam insulation in the roof lines, Heat or Energy Recovery Ventilators, Energy Star lighting, and heating and cooling systems.

Goals for 2011 – 2014

- Core Campus:
 - Complete the Energy Plan for the Built Environment.
 - Complete the Carson Audit forms and training program
 - Implement all quick payback energy efficiency projects for the top 15 core campus buildings.
 - Complete the comprehensive Lighting Audit program for all audit candidates .
 - Implement quick and intermediate payback projects for all lighting projects.
 - Complete the comprehensive Water Efficiency Audit program compliant with LEED for Existing Buildings: Operation and Maintenance for all campus buildings.

- Implement all quick payback energy efficiency projects for the top 15 core campus buildings.
- Robustly implement the utility monitoring program:
 - Install real time monitoring for all the residence halls
 - Install real time monitoring for other top ten buildings.
 - Use real time and monthly monitoring data to confirm paybacks for projects. Use to promote energy efficiency to the larger community.
- Develop a funding strategy for implementing energy efficiency and related deferred maintenance projects:
 - Use surplus utility budget to implement intermediate payback projects.
- Find permanent funding for a full time Energy Services Intern.
- Rentals:
 - Develop a funding strategy for implementing energy efficiency and related deferred maintenance projects:
 - Obtain rebates for all rental audits.
 - Implement 100% of all quick payback, and 50% of all intermediate payback projects.

Computing Services

- Continue to encourage campus to shut down computers when not in use Continue to shut down computers in labs nightly which can represent a \$50 to \$70 energy savings annually per computer . **Ongoing by Computing Services.**
- Convert to laptops when possible for 50% reduction in energy use . **Ongoing process.**
- Develop Sustainable Computing Policy. **Not yet.**
- Educate Community to enable energy savings settings on individual computers used on campus. **Yes, through Green Living Guide and Sustainable Practices Guide.**

Food Systems

- Sustainable Foods Policy Task Force will guide food purchases for the College in collaboration with dining services provider Sodexo. **Policy recommendations submitted to President and some have been implemented by Sodexo this year via the College's additional investment in the purchase of local foods.**
 - Determine a “points” formula and set percentage goals that increase each year for the amount of food purchased that meets the “points” requirement.
 - Increase this base point criteria over time (e.g., setting goals to increase the percentage of fruits, vegetables, and juices that come from the region; awarding points for local foods that are certified sustainable or organic by select outside benchmarks)
- Continue to provide a Community Supported Agriculture program to encourage (CSA) for faculty, students and staff. **Yes.**

- Continue to raise and sell antibiotic-free, hormone-free, grass-fed beef and pork poultry and eggs; maximize sustainable production to offset food imports. **Yes.**
- Continue to provide herbal products made from campus Garden herbs. **Yes.**
- Hold “Everyone Cooks” – a weekly sustainable foods cooking class for the campus community. **Yes.**
- Phase out use of trays in cafeteria. **Completely phased out.**
- Encourage the “Clean Your Plate” program to minimize waste. **Campaign runs periodically.**
- Continue to compost food waste from the cafeteria through use of the Green Drum and consider need for increasing the College’s food composting capability. **Additional GreenDrum purchased. Off campus composting used temporarily until GreenDrums are fully operational again.**
- Distribute Green Event Guide campus-wide to encourage sustainable food practices at all College events on and off campus. **Sustainable Practices Guide developed and Green Living Guide updated and distributed January 2011.**

Green Events

- Encourage all divisions campus-wide to adopt Green Event Guidelines, posted on-line, for all College internal and external College events. **Posted and newly formatted for January 2011 distribution in Sustainable Practices Guide. ELC staff will hold workshop in 2011 on implementation.**
- Educate the public about Green Event practices by communication either on the invitation or at the event that details the “green” aspects of the event. **Fulfillment by a few departments.**
- Encourage College staff to demonstrate best sustainable practices when traveling. **Fulfillment by a few departments.**

Green Office/Printing

- Encourage offices campus-wide to adopt Green Office Guidelines. **Guides updated and to be circulated January 2011.**
- Continue to consider best practice purchases for paper and inks at the College Print Shop. **Yes, ongoing.**
- Honor College’s ENERGY STAR purchase policy for printer and copier purchases campus-wide. **Partial fulfillment.**
- Shift to on-line systems for payroll, budget reports, as planned in the College’s Accounting Office, to result in significant savings of resources, time and money usually spent on paper, envelope and labels. **Yes, ongoing shift.**
- Continue to encourage offices campus-wide to follow the Publication Guidelines found on-line. **New campaign launches January 2011.**
- Whenever possible, use FSC certified paper for the external publications of the College. **Yes.**

- Several departments, with leadership from the Library, launched a substantial and ambitious campus-wide paper reduction initiative in fall 2010.

Land Use

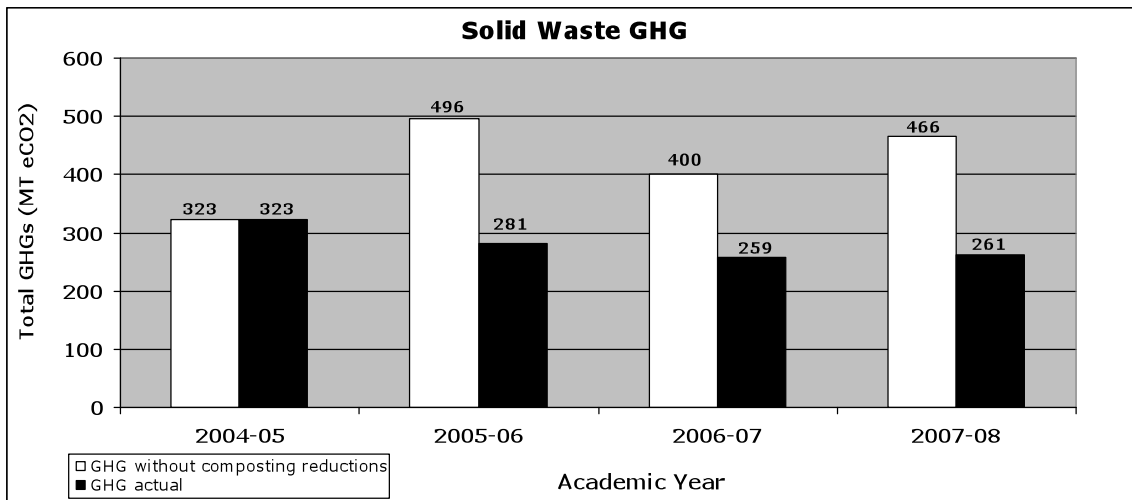
- Honor Land Use Pattern Language Principles: Ongoing dialogue and challenge.
- Produce a Campus Master Plan to inform all future land use decisions at the College. “One Land” document produced by the Land Use Committee to ground future land use decisions in College principles and policies.
- Develop a pattern book of best practices for land management and the built environment. No, but Strategic Plan calls for research on best practices in 2011-2012.
- Include sustainability as a framework for decision-making in all Land Use Plans. Ongoing dialogue and challenge.
- Reduce emissions through Native Landscaping practices and honor Landscaping pattern language principles. Yes, ongoing practice of this.
- Continue to apply sustainable gardening principles and water conservation actions at the College Garden. Yes, with addition of recent rainwater catchment systems this is enhanced.
- Continue to monitor emissions at College Farm while also monitoring organic matter. Yes, ongoing.
- Continue to improve water conservation measures for watering of livestock and irrigation: livestock watered appropriately; drill wells to reduce the use of municipal water. Completed at the Garden. No municipal water used, as of this year, for any of the crops.
- Define and support sustainable forestry practices for the College’s 700-acre forest that integrate carbon sequestration capacity into the management plan. With leadership from the director of the Sustainable Forestry Program, research is underway.
- Hold the preservation of cultivated land as one of our highest principles and explore conservation easements to demonstrate this; insure all future development planned for non-agricultural land. Yes, the “One Land” document underscores this.

Purchasing

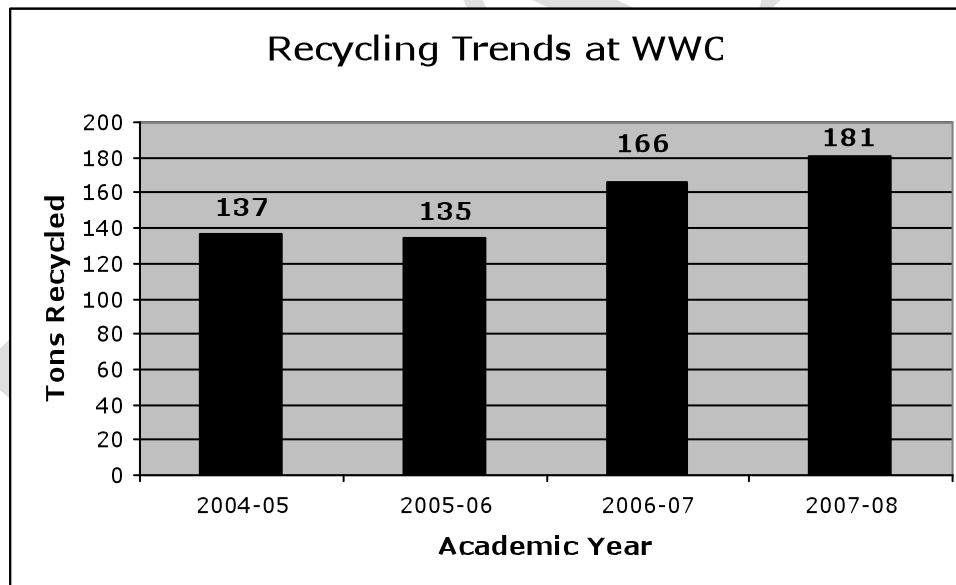
- Develop centralized purchasing so green vendors/preferences are easily accessible to the campus community and economies can be realized through bulk orders starting 2009/2010 (Purchasing). Continued goal and challenge not yet fulfilled.
- Circulate Purchasing Pattern Language campus-wide and re-emphasize the ENERGY STAR purchasing policy starting 2009/2010 (Purchasing). Circulated in the Sustainable Practices Guide.
- Encourage Campus Store purchases that meet sustainability best practices as recommended in AASHE’s STARS assessment guide (Campus Store). Yes, Nebraska Books has committed to this and the transformation is underway.

Recycling

4 Year Trend in Solid Waste Greenhouse Gas Emissions



4 Year Trend in Tons Recycled



Climate Action Goals for Recycling Crew: *The following CAP goals for Recycling were revised soon after completion of the CAP document. The original goals are followed by the revised goals and an update.*

Original CAP Recycling goals:

- Study and implement LEED EB waste management procedures

- Utilize LEED EB MR Pre 1.1 Source Reduction & Waste Management Waste Stream Audit to create a campus wide baseline waste audit
- Utilize Waste Audits to accomplish the following:
 - Identify Recycling Centers in need of improvement with cabinetry, signage, new bins, etc
 - Create info displays or other educational opportunities for campus
 - Identify source reduction strategies for campus
 - Attain/Maintain an overall Recycling Rate of 50%
 - Use LEED EB MR Pre 1.1 Source Reduction & Waste Management: Storage & Collection, and ensure compliance campus wide.
 - Includes crew goal to maintain signage and bin inventory at all recycling locations
 - Use MR Credit 1.1 & 1.2: Construction, Demolition, and Renovation waste Management.
 - Work with carpentry, campus support, and other FMST crews to develop a program to divert a minimum of 75% of all construction debris from landfill
 - Educate students and staff about recycling procedures
 - Participate in Freshman orientation & RD training
 - Utilize MCP's as a form of communication to help with problems or encourage good recycling practices
 - Conduct Earth Week Activity
 - Utilize waste audits to create site-specific educational strategies
 - Improve opportunities for outdoor recycling
 - Identify Priorities for bin placement
 - Set up at least one new/improved outdoor recycling center annually
 - Complete Annual Report
 - Analyze to determine what projects/processes worked and didn't work in the previous year
 - Utilize to determine priorities for following year
 - Continue to improve accuracy of report
 - Track Wood Shop weights
 - Improve weight estimates
 - Determine best way to make information available to campus
 - Modify to reflect LEED waste management reporting
- Maintain Campus Surplus Program
- Maintain Campus Composting Program
 - Acquire permanent permit
 - Evaluate need for secondary composter & research possibilities
- Develop opportunities that support the Triad Mission of the College
 - Continue to offer and improve tours of recycling facility to schools and groups
 - Complete at least one service activity annually as a crew
 - Continue to find ways to integrate students academic interests with crew activities
 - Compost program/research
- Attend conferences that are work, academic, and career-oriented

Revised CAP goals and update:

- Research & identify areas for improvement in waste reduction

Status:

- Waste audit of Gladfelter trash dumpster: Waste for this dumpster is estimated using EPA data. Weighed & sorted trash in this dumpster for two weeks. Found that it weighs ½ less than we estimated (32 tons/yr instead of 64 tons/yr). Also found it contained recyclables and trash from off campus. Found around 250 lbs of recyclables/week were going into the unmonitored dumpster, and around 200 lbs/wk of food waste from the kitchen that should have been composted. Made new signage and are designing a trash shed to put in place of this dumpster. This way, weights will be accurate, we can monitor what is put into the shed, and it will mean that the trash hauling truck will not have to come to campus 3x a week.
- Researching possibilities to centralize paper shredding at the Recycling Center. Currently, shredding is contracted out to a local company which sends a truck to campus to collect the paper and haul it off site to shred. Shredding on site would generate revenue instead of an expense, and will keep large trucks from coming to campus.
- Did an audit of our plastic recycling dumpster to identify what types of plastics campus is producing. Found that about 44% of Plastic #1 recyclables were single serve. Wrote an article in the Echo about it. Hope to do more to reduce single serve use next year.
- Participating now in RecycleMania

- Implement new waste reduction strategies for general campus

Status:

- Restarted junk mail project. Called companies and removed names for 1,500 people receiving junk mail.
- Implemented a pilot program to recycle #5 plastics through Greenlife Grocery.
- Implemented a pilot program to recycle rigid bottle caps through Aveda
- Implemented cork recycling program
- Installed 5 new trash/recycling bins at smoking pavilions around campus
- Assigned two crewmembers to focus on diverting large unwanted items from the landfill by using Freecycle & Craigslist to donate items to local community members.

- Improve construction waste recycling program

- Educate construction crews about construction waste recycling procedures
- Track construction waste weights from all campus construction projects
- Identify largest waste materials and find ways to divert them from landfill

Status:

- Worked with campus construction crews to ensure they are sorting materials on site
- Started weighing & recording all construction waste, separated by type, and give updates at bi-weekly construction waste meetings.
- Found a local facility to accept & recycle sheetrock, one of the largest waste items from construction sites.
- Have had difficulty keeping data organized & correct. Update around March 2010 shows we have recycled over 20 tons of material so far. Hope to have more accurate weights next year.

- Educate the campus about waste reduction
 - Status:
 - Implemented a food waste education project in Gladfelter – put up a poster in Gladfelter that tracks/shows how much food waste is thrown out each day
 - Wrote numerous articles in the Echo about various waste issues
 - Held TRASHOCALYPSE, a three day event that educated campus about waste through signage and lunch-time skits
- Increase composting capacity
 - Status:
 - Purchased another GreenDrum. Estimate that we will be able to compost an additional 12 tons of food that are currently being thrown away once it is set up.
 - Set up dorm composting bins. Started in February with one at Dorland, and now have a total of 4 bins serving 10 dorms. We have composted 744 lbs of foodwaste from these dorms since February.
- Implement crew procedures to reduce our own operational footprint
 - Status:
 - Assigned a crew member to serve as energy monitor at lunch and end of day closing. Check computers, heat, power strips, lights. Have reduced electricity use by around 40-50%.

Transportation

Buildings and Grounds Committee, Environmental Leadership Center, Business Office, Global Studies Dept.,

Transportation sources accounted for 29 percent of total U.S. greenhouse gas (GHG) emissions in 2006. Transportation is the fastest-growing source of GHGs in the U.S., accounting for 47 percent of the net increase in total U.S. emissions since 1990. Transportation is also the largest end-use source of CO₂, which is the most prevalent greenhouse gas. These estimates of transportation GHGs do not include emissions from additional lifecycle processes, such as the extraction and refining of fuel and the manufacture of vehicles, which are also a significant source of domestic and international GHG emissions (<http://www.epa.gov/oms/climate/basicinfo.htm>). At Warren Wilson, Transportation accounted for 30% of all campus greenhouse gas emissions in 2007/2008.

- Scope 1: 4.9% campus fleet use
 - Scope 3: 18% International Programs
 - Scope 3: 3.6% faculty/staff commuting
 - Scope 3: 3.4% student commuting
- Distribute Sustainable Vehicle Policy to all budget managers. Distributed campus wide in Sustainable Practices Guide.
 - Implement sustainable travel practices to minimize the College's carbon footprint whenever possible. Gathered information regarding faculty and staff housing for a carpooling map. Additional bus route added for morning trip to campus and faculty and staff now may use the bus to commute to work.

- Monitor work crew use of on-campus vehicles campus-wide through quarterly energy reports and encourage decreases where possible . **Campus Greening Crew monitors and sends reports quarterly to all crews about their campus fuel use.**
- Support certification of carbon offset project in Panama, established through the Global Studies program, for possible future carbon offsets for international travel at Warren Wilson; provide ongoing faculty and student engagement with this program to assist in this process. **International Programs has begun an annual carbon offset purchase. The Panama project is not yet operational in terms of verifiable offsets but the study is underway.**
- Improve documentation system for business travel at the College. **Not yet done and needs to be captured.**
- Consider planned obsolescence for campus fleet. **Ongoing conversation.**
- Continue to subsidize free rides for all campus community on the Asheville Public Bus that stops on campus several times each day **YES! As above, a morning route has been added.**
- Examine whether to continue to support a partnership with UNC Asheville for access to Zimride – a Facebook-based ride sharing system. **Yes, it has been continued.**
- **Consider setting aside prime parking spaces for carpoolers.** **No, parking is too scarce.**
- Consider foot/bicycle paths to the College’s residential neighborhoods . **Continued discussion and need.**
- Provide incentives and organizational tools for carpooling to campus such as GIS carpool maps. **Currently dealing with privacy issues around sharing addresses.**

III. Carbon Offsets

Environmental Leadership Center, Facilities Management and Technical Services

- Consider the purchase of carbon offsets as a transient measure to neutralize unavoidable carbon footprint. **International Programs is currently purchasing meaningful carbon offsets for some of its carbon footprint.**
- Consult with the College’s GHG Science Advisor at the National Climatic Data Center to keep to keep abreast of the most current research on carbon offsets. **Ongoing.**
- Purchase green-e certified, wind power REC’s for 100% of annual KW use and determine what percentage can legitimately be counted as a carbon offset to assist with the impact of International Programs. **Annual purchase continues. Offset will be calculated.**
- Select certified, verifiable carbon offset projects, with positive local and relevant international social justice impacts, to recommend to faculty, students and staff, especially those who travel on International Programs. **Yes, ongoing and led by International Programs.**
- Seek grants to fund potential annual offset purchases by the College. **Advancement is aware of this need. We prefer to seek grants to install renewable energy arrays and have grants currently in process for this.**
- Provide web-based calculator for community to easily determine their transportation carbon emissions. **Not yet.**
- Purchase carbon offsets for speakers at campus events whenever possible. **ELC does this.**

IV. Curriculum/Educational Experiences

Environmental Leadership Center, Academic Affairs, Work Program, Service Learning, Student Life

It is time for our educators, especially at the university level, to get off the sidelines as spectators and into the game as participants. If Paul Hawken is right - that only business can lead - who will prepare tomorrow's business leaders to lead responsibly? You and your associates! Environmental and social responsibility are critical – as much as financial responsibility. So, challenge the status quo that, today, is preparing leaders to lead irresponsibly, because vast ignorance of the problem is allowed to abound. If your job is to dispel ignorance, then put ecological and social ignorance at the top of your priorities. Let your research help define the path society should choose for survival of homo sapiens, not its extinction, and the preservation of those other 30 million species.

Ray Anderson's Commencement Address, Warren Wilson College,
May 2008

Warren Wilson's Triad of academics, work and service, its shared governance, and its Student Life programming form the structure for the experiential learning that defines the Warren Wilson liberal arts experience. Students engage in the Climate Action Plan through the Triad.

Most students who apply to Warren Wilson say they were drawn by these top three qualities: environmental leadership, community, and sustainability. They score higher than their peers at other liberal arts colleges for the strength of their passion to change the world. Warren Wilson students *expect* to learn to address pressing societal issues like climate change. And they expect to work for this change now, while undergraduates.

Shared governance offers all members of the community the opportunity to participate in community decision-making. The community has provided detailed input for the Climate Action Plan through a public comment period and cross-sector representation on the Greenhouse Gas Emissions Reductions Task Force.

Students serve on every committee of the College – from the Sustainable Foods Policy Task Force, to the Buildings and Grounds Committee, the Land Use Committee, the Marketing Committee and more. Citizenship skills and institutional understanding are developed through this service. Students will participate in the following educational plan to support the College's climate action goals.

Academics

Director of Sustainability Education, Chemistry Department, Chief Sustainability Official, GHG Task Force

- Invite the increasing numbers of faculty who discuss some aspect of sustainability in their courses to consider a more formal placement of this topic in their syllabi. **Discussion in process.**
- Implement the Chemistry Department's new strategic plan that includes energy as a required area of competency; three chemistry courses will cover the science of climate change. **Yes, ongoing.**
- Continue to involve faculty and their classes in the implementation and further development of the Climate Action Plan. **Yes, ongoing. As an example, 15 classes participated in INSULATE weatherization days.**
- Plan for the following climate change studies:
 - Behavior change response to the Climate Action Plan (psychology department). **Will resume surveys in Fall 2011.**
 - Carbon sequestration studies for campus lands (forestry and chemistry). **Research is underway.**
 - Carbon offsets as economic development initiatives (global studies). **Study is underway.**
 - GIS presentations of the College's Climate Action Plan progress. **Yes, maps are used for displaying building usage and carpooling.**
- Ensure that the more than 60% of all Warren Wilson students who take Introduction to Environmental Studies, where they study climate change, are encouraged to support the Climate Action Plan. **Several class presentations have been made by ELC staff.**
- Provide stipends for faculty to participate in Warren Wilson's new, grant-funded interdisciplinary sustainability curriculum, to focus on Energy and Climate in 2010/2011. **Yes, with leadership from the Faculty Director of Sustainability Education. interdisciplinary workshops with strong faculty participation are underway.**
- Invite faculty to a discussion about the interdisciplinary aspects of the climate change challenge. Several faculty participate in the Climate Action Team and the Sustainability Working Group where the dimensions of this challenge are discussed.
- **NEW to CAP in 2011: The Library is leading a campus challenge to study and reduce paper use campus-wide include paperless teaching.**
- **The International Programs Office maintains and promotes bilateral partnerships and collaborations that share commitments to sustainable travel and study focuses centered on sustainability. In IPO pre-departure orientations that all participants are required to attend, program staff calls attention to the environmental and social impact of international travel and provides students, faculty and staff with information on how to minimize detrimental effects and encourages reflection that may lead to life-time behavior change as result of international/cross-cultural observations and experiences. The International Office concluded two new affiliation agreements with study abroad program providers in 2010 that will allow WWC students to study abroad with an intense focus on the issue of sustainability in six different nations.**

Work

Dean of Work, Chief Sustainability Official

- Formally enlist all work crew supervisors to support the Climate Action Plan. **Yes, presentations at regular retreats.**
- Continue to encourage students to champion best practices on their work crews; through their direct action, proposals have been written throughout the years that have established the vegetarian Cowpie Café, the green standards for the EcoDorm, the Recycling Program, the EcoTeam outreach program, the EcoDorm's permaculture, the Green Drum Composter, Real-Time Monitoring, and many other best practices. **Yes, and Grapple evaluation objectives for all students emphasize importance of supporting best sustainable practices.**
- Encourage work crew supervisors to engage their crews in appropriate activities that support the College's climate action commitments; for example, the Campus Greening Crew conducts the Greenhouse Gas Inventory and creates monitoring tools; the INSULATE! Crew weatherizes the homes of people living below poverty level; the Water And Energy Efficiency Crew conducts energy and water consumption audits campus wide and implements savings measures; the Energy Audit Crew installs real-time monitoring units in campus buildings; the Electric Crew conducts campus-wide lighting audit; the Recycling Crew's operation was recognized as number one in waste management in the Carolinas and in higher education in 2008; student crews constructed the College's first LEED Gold building; the Autoshop Crew retrofit lawnmowers to run on propane.; the Landscaping Crew practices native landscaping principles; the Computer Crew shuts down all campus lab computers at night and adjusts all campus computers for sleep feature; the Dining Services Crew purchases local foods and caters events "green;" the Farm and Garden Crews implement water conservation and sustainable agriculture practices; the Purchasing Crew support sustainable purchasing principles. **Work Crew supervisors are encouraged to support the Climate Action Plan and the Strategic Plan directs ELC staff to meet with individual work crews and assist in clarifying best practices. The new Sustainable Practices Guide, released in January 2011, assists crews in adopting best practices.**
- With support from the Work Program Office, assist students to attend conferences off-campus related to their campus work in such fields as environmental journalism, renewable energy, the local foods movement, LEED practices in the built environment, etc. **Yes, the Work Program is supporting this conference attendance.**
- Offer scholarships for on-campus HERS certification training (Home Energy Rating System Raters) and BPI (Building Performance Analysts) for staff and their student crews to prepare them to better implement best practices campus-wide. **Yes, this has been done and as a result two students have become certified HERS raters.**

Service

Dean of Service, Chief Sustainability Official

- Foster student understanding of sustainability as a framework through which to address community problems through a formal reflection process that examines the complex roots of these issues. **Yes, workshops have been held to introduce the Service staff and crew to the sustainability framework.**
- Continue to develop service opportunities in areas of student interest; to date, 60% of the projects students choose focus on environmental or social justice issues, many of which are related to climate and energy impacts like weatherization of homes of people

living in poverty, engagement in affordable housing issues in the region, rebuilding communities in Louisiana and Mississippi, and assisting with community gardens to enhance local food production. **Yes, this focus is strong. For 2010-2011 Service is focusing on food security.**

- Continue to refine the newly formed program, “Wilson Cares,” and encourage students to form issue-based concern groups around regional climate change impacts. **These issue based workshops are becoming more formalized and address issues with a sustainability focus. Climate change has not yet been adopted as a topic though other topics have addressed related environmental impacts (like land use).**
- **New to 2011 CAP: Service Learning has agreed to serve as the Sustainable Practices case study site for the campus.**

Student Life

Dean of Student Life, Environmental Leadership Center Education Director

- Continue to update “The Green Living Guide,” with recommendations for best climate action practices, and make it available on-line for all students. **New update available January 2011.**
- Continue to engage all first year students in workshops, orientation sessions, and skits that introduce sustainable, responsible decision-making and enlist their participation in the Climate Action Plan. **Ongoing. Campus Greening Crew supports Student Life to develop these presentations.**
- Support Residence Life staff to help launch the College’s “Give a Hoot - Five Things You Can Do” campaign for climate action. **Yes, this was launched at First Year check-in.**
- Support the theme-based EcoDorm staff to further develop the educational value of the residence hall. **Ongoing.**
- Continue to circulate the student-written energy usage manuals for the LEED-certified EcoDorm and the two Village dormitories to new residents. **Ongoing and web-based.**
- Strengthen Wellness programming to foster sustainable lifestyle practices and responsible community engagement. **Ongoing.**

Additional Educational Experiences

Environmental Leadership Center, President’s Advisory Council

- Continue to provide paid Summer Sustainability Internships for Warren Wilson students who are interested in working for organizations that address climate change and alternative energy such as the National Climatic Data Center, the City of Asheville Sustainability Office, the Smithsonian Environmental Research Center, and Dogwood Alliance **Yes, ongoing.**
- Facilitate meaningful participation for Warren Wilson student associations and networks to participate each year in national climate action conferences targeted to students. **Yes, but this is student-driven and often supported with Work Program funds.**

- Develop policy in 2009/2010 to guide the College's support for student attendance at these conferences. Activism Task Force developed recommendations to inform this policy. Service Learning is leading the implementation of the recommendations.
- Continue to provide grant opportunities (see Funding Section) that encourage all Warren Wilson students to develop new and effective ways to address climate action on campus. Yes, Campus Greening Seed Grants and the President's Climate Action Fund encourage this innovation.

V. Funding Climate Action Goals

Environmental Leadership Center, Business Office, Advancement Office, Business Department, Academic Affairs, Work Program

- Achieve the Climate Action goals as a priority of the College's new strategic plan Yes, the CAP was specifically listed in the strategic plan.
- NEW FUNDING ACCOMPLISHMENTS (revised 1/11)
 - Obtained approval from the Business Office to use left over utility funds (from energy efficiency efforts) for energy and water efficiency projects.
 - Working with Progress Energy to maximize our potential for rebates. \$1500 has been secured in rebates.
- Engage Advancement in fundraising to improve campus energy efficiencies. Grant-writer has submitted proposals to fund retrofits and renewables.
- Continue to explore participation in the Clinton Climate Initiative and in Performance Contracting with ESCO's as a means to make facilities upgrades affordable. No longer pursuing performance contracting after extensive inquiry.
- Continue to partner with regional organizations to fund Climate Action projects with revenue and in-kind contributions (e.g., Progress Energy funded the College's energy audit equipment this past year; the National Climatic Data Center has assisted with Warren Wilson's design of a GHG regional databank; the City of Asheville will share in grant-seeking to scholarship the College's HERS training planned for the fall). Yes, most recent grant from Progress Energy funded new EcoTeam Energy and Climate curriculum.

Innovation and Education Funds

Vice President for Academic Affairs, Environmental Leadership Center, Dean of Work

- Incentive Faculty with a stipend for participation in the College's 2010/2011 interdisciplinary Energy and Climate curriculum. Faculty Director of Sustainability Education managed the AVD grant and had wide faculty participation in workshops during the year. Those participating in the curriculum received a stipend.
- Provide student grants up to \$500 through the **President's Climate Action Fund** to support their innovative design of campus projects that demonstrate solutions to emissions reductions challenges. Has been posted at the web and will be regularly re-announced. No applicants in past year.
- Continue to provide **Campus Greening Seed Grants** for students who may apply for up to a \$300 grant to fund campus projects that demonstrate innovative solutions to

environmental sustainability challenges . **Yes, these continue to support student innovation.**

- Continue to **support** students to attend **conferences and trainings** to further their work skills; as an example, students attended the National Conference of Environmental Journalists in 2008, which focused on climate change. As a result they crafted radio essays about climate change for the College's public radio show – the *Swannanoa Journal*. **Yes, Work Program funds continue to support this student opportunity.**
- Continue to assign revenue from the College's donor-funded, grid-tied solar array (with KW's sold to NC Green Power) to the **Community Sustainability Fund**; this donor-approved fund supports projects that have regional outreach and teach sustainable practices re emissions reductions. **Revenue from the array will support a Sustainability Outreach Endowment for ELC-led community based projects that wean the greater region off coal.**
- Budget for electricity, natural gas, and fleet fuel use per capita each year; initial revenue saved as a result of the Climate Action Plan will be transferred at year-end to a **Campus Sustainability Fund** to support future campus energy reduction measures. **There have been savings since this goal was established in 2009, and these have either been reallocated to other areas of need or deposited in the Campus Sustainability Fund.**
- Assign net revenue from the Home Energy Rating Systems (HERS) and Building Performance Analyst (BPI) to **scholarships** for Warren Wilson staff and students to attend these trainings. **Yes, and as a result of participation, two WWC students have been certified as HERS raters and currently use these skills on campus buildings.**

Return on Investment

Director of Facilities Management and Technical Services, Environmental Leadership Center, Business Faculty

- Measure financial savings annually that result from Climate Action Plan reductions while understanding that in order to achieve deep retrofits extended payback periods of up to 10 years may be needed. **We are beginning to document retrofits and their impacts. We have documented cost-benefit analysis for newly constructed LEED buildings.**
- Build on our Return On Investment (ROI) profile of campus LEED buildings to measure long-term cost of investments in building retrofits and other energy savings measures compared to long-term benefits; with metering in place for each campus building, documentation available for usage changes in each building (including the cost of the changes), and an annual greenhouse gas inventory that tracks usage by building and maps trends over time, the ROI will eventually be easily calculated. **FMTS is currently digitizing some of the monitoring systems. Once upgrades are more systematically documented we will be able to demonstrate the ROI.**
- Demonstrate economic return to secure greater support for future investments in energy reduction projects. **As noted above, more documentation systems need to be in place.**

VI. Monitoring

Environmental Leadership Center/Campus Greening Crew, Water and Energy Efficiency Crew, GHG Task Force

- Input electricity, natural gas, and fuel use monthly using ENERGY STAR software. **Yes, ongoing. Energy Services Crew inputs for Campus Greening Crew use.**
- Produce annual Greenhouse Gas Emissions Inventory using Clean Air – Cool Planet tools **Yes, by the Campus Greening Crew.**
- Develop and issue quarterly energy usage reports, with historical trend comparisons, for all building managers and work crew supervisors on campus **Yes, ongoing.**
- Post these reports at the College’s Climate Action website. **Yes, ongoing.**
- Monitor progress toward Climate Action Plan goals and review value of strategies with quarterly Greenhouse Gas Emissions Task Force meetings. **The Task Force has morphed into the Climate Action Team. An annual review of progress and effectiveness of strategies will be done to ensure the CAP remains a living document.**
- Install real-time monitoring units across campus (funded through student grant writing efforts) with web-based visual displays available to campus in real-time. **In progress, only complete in one building.**
- Conduct dorm room audits to assist students in monitoring value of energy reduction measures. **Yes, see Behavior Change section.**
- **Develop public displays that monitor progress toward Climate Action goals throughout campus. Not deemed of value.**
- **Report progress on Climate Action goals in the College’s Annual Sustainability Report. Report not deemed of value. Progress will be reported in annual Climate Action Plan update.**
- Partner with Sustainable Foods Policy Task Force to develop protocols to monitor food footprint. **To be undertaken.**
- Continue to use AASHE’s STARS assessment to monitor sustainability progress on campus. **Yes, this is used as an unofficial guide.**

VII. Outreach

Environmental Leadership Center, Office of the President, Service Learning

Climate Change Awareness As the only institution in the region with an annual greenhouse gas emissions inventory, Warren Wilson serves as a community advisor to organizations that aspire to this task. **Ongoing dialogue with greater community.**

Community-Based Research Warren Wilson faculty, staff and students engage in community- based research projects in many areas of climate change from impacts of energy costs on low-income homeowners, to air and water quality, effects of unplanned growth on regional energy needs, and health issues. **Ongoing research topics.**

Community Service Warren Wilson leaders will continue to serve on boards and advisory councils for effective sustainability organizations in the region. **Yes.**

EcoTeam curriculum developed in partnership with the Jane Goodall Institute's *Roots & Shoots Program*, taught by Warren Wilson students to more than 1,200 regional third graders each year will add a two new lessons in 2011, funded by Progress Energy, and developed in partnership with Asheville-Buncombe Technical College's Global Sustainability Institute, on "Climate and Energy." **Complete.**

Green Walkabout Hundreds of visitors take this campus tour each year to visit best practice sites for land, recycling, and the built environment; the Green Walkabout inspires individuals, higher education institutions, faith and living communities, hospitals, agencies and businesses to learn about the value and the implementation strategies for innovation and best sustainable practices. **Ongoing.**

Mountain Green, a year-round College outreach initiative to promote sustainable community development that includes the following:

- Annual conference to encourage the ethos and the practices that will support the development of sustainable communities in western North Carolina, with seminars conducted by experts in energy, tourism, and the built environment; **Ongoing.**
- Monthly Mountain Green sustainability seminars on campus by experts in sustainable development practices; "Sustainable Community Certificate of Participation" awarded at year end to participants who attend at least eight of sessions. **Ended this program component in spring 2010.**
- INSULATE! program: Warren Wilson students work with community volunteers to weatherize the homes of citizens in Buncombe County living below the poverty level, conducted in partnership with Community Action Opportunities, Asheville GO, the Council on Aging, the Homebuilders Association, the City of Asheville, Mountain Housing Opportunities, and Progress Energy; students also track greenhouse gas emissions savings from each home and promote the model nationally; five other colleges are adopting the INSULATE! model. (http://www.warren-wilson.edu/~ELC/New_ELC_Website/_insulate/about.php for more information). **Program ongoing but no longer a Mountain Green component. Anchored now in the Triad of academics, work and service. With ELC support, Faculty will lead 15 classes on INSULATE projects in 2010-2011.**
- HERS (Home Energy Rating System Raters) and BPI (Building Professional Analyst) training site: In response to the regional demand for INSULATE! and other weatherization programs, and the need to provide "green" job training to meet this demand, Warren Wilson will offer HERS and BPI certification trainings in 2009/2010. **Program component complete. Courses were offered in partnership with the City of Asheville.**

Partnerships

- City of Asheville: Warren Wilson has a formal climate change partnership with the City that includes ongoing collaboration and resource sharing to achieve respective GHG reduction and sustainability goals; provide internships for WWC students; engage

in national speaker collaborations; etc. **Yes. Internships for the City continue to be invaluable experience for WWC students.**

- National Climatic Data Center: One of the Center's IPCC scientists serves as official science advisor to the College's partnership with the City and to Warren Wilson's greenhouse gas emissions inventory; another Asheville-based IPCC scientist is a frequent speaker on campus and has assisted with the College's educational outreach to other higher education institutions. **Yes, relationship is ongoing.**
- Progress Energy: Warren Wilson serves on its Citizens Energy Advisory Council developed to define an alternative to another power plant in the region; Progress Energy has funded the purchase of the College's energy audit equipment and supported the development of a new energy and climate curriculum for Warren Wilson's EcoTeam program for third graders. **WWC continues to have a strong partnership with Progress Energy.**
- Internship Partners: The College has numerous partners who offer summer internships for students in the area of sustainability and climate change, from renewable energy companies, to the National Climatic Data Center. (See http://www.warren-wilson.edu/~ELC/New_ELC_Website/_internship.php) **In 2010-2011 the ELC added several new energy internships to the Program.**
- The Wilderness Society and *Orion* magazine: The College has a formal partnership with these organizations to offer Headwaters Gathering ... Southern Appalachia at the Crossroads – an annual conversation with national experts about climate change and sustainability. **For 2010-2011 Headwaters sponsored Bill McKibben at Warren Wilson just days before 350.**
- Mountain Green Partners: the Mountain Green Steering Committee is comprised of leaders from the Chamber of Commerce, the region's economic agency Advantage West, the Community Foundation, and regional developers and realtors who support the annual Mountain Green initiative at Warren Wilson, providing educational outreach that fosters sustainable community. **New partners for the 2011 conference will expand the theme to health issues.**
- National Wildlife Federation: the College has partnered with this organization to bring higher education institutions to campus to discuss climate change and take a Green Walkabout and this collaboration may continue. **Currently the ELC director serves on their Advisory Council**

Service Learning Warren Wilson students participate in more than 5,000 hours of environmental community service each year; many students serve organizations focused on climate change adaptation and mitigation. **Service topics continue to address climate action impacts as a subtext in various projects.**

Speaker Series Warren Wilson will continue to host national experts for public talks about sustainability, environmental leadership, and climate change. **Yes, Sustainability Speaker Series is underway with Bill McKibben, Lester Brown, Mallory McDuff and Jeff Biggers thus far.**

Swannanoa Journal, a public radio program that is researched, written and recorded by Warren Wilson students and broadcast weekly on two public radio stations, with a five-

state outreach; a significant number of the broadcasts will continue to focus on all the sustainability impacts of climate change. Swannanoa Journal now programs only on WNCW public radio, once per week.

VIII. Policies, Principles, and Administration

Chief Sustainability Official, President's Advisory Council, Environmental Leadership Center

- College's Chief Sustainability Official reports to President, chairs the Greenhouse Gas Emissions Reductions Task Force, and serves on the President's leadership team – the President's Advisory Council. The Task Force has morphed into the Climate Action Team. The Sustainability Working Group also supports the Climate Action Plan.
- Environmental Leadership Center monitors commitments and conducts community outreach
- Climate Action Plan builds upon the legacy of the College commitment to stewardship and best practices. New Strategic Plan calls for fulfillment of all commitments including the Climate Action Plan.
- College's Mission, Vision, and Core Values call for environmental responsibility as does the College's new Strategic Plan.
- Charter signatory of the American College and University Presidents Climate Commitment
- Signatory of the Talloires Declaration
- President's Advisory Council has made a formal decision to practice Sustainable Decision-Making
- College's Environmental Commitment Statement, voted on through shared governance, calls for best practices
- Pattern language adopted by Warren Wilson in the early 1990's established principles for Land Use, Native Landscaping, Native Wildlife and Biodiversity, and Purchasing. New "One Land" document provides support for future land use plans.
- Internal College policies support climate action:
 - Minimum LEED silver design standards for all new construction;
 - Sustainable vehicle policy
 - Minimum annual purchase of at least 15% of total KW use in renewable energy credits
 - ENERGY STAR purchases where available
 -

IX. Renewable Energy

Environmental Leadership Center, Facilities Management and Technical Services

- Seek funds to install solar thermal on appropriate buildings. Grants are underway.
- Continue to pursue installation of demonstration rooftop wind turbine. No longer viable due to insufficient average wind.
- Continue to manage 13KW, grid-tied solar array to generate revenue for community projects. Yes, and revenue will also support development of a Sustainability Outreach Endowment.

- Explore funding and location possibilities to expand grid-tied solar generation to reduce the need to purchase offsets. Established Renewable Energy Fund of \$20,000 to be available 2011-2012 in response to student campaign.
- Study efficacy of geothermal systems on campus. Not yet done.
- Study production of biogas from farm waste with student/faculty team. Research planned.
- Continue to purchase certified REC's from wind power for 100% of annual campus electricity usage. Yes.

X. Research

Environmental Leadership Center, Advancement, Academic Affairs, Forestry Program, multi-disciplinary faculty, community partners

- Work with Advancement to fund faculty, student and staff research related to climate change. One faculty grant secured to support sabbatical research.
- Initiate carbon sequestration research on the campus' 700-acre forest through the Sustainable Forestry and the Chemistry Program; according to the EPA, in the US, forests and agricultural soils account for a significant removal of CO₂ from the atmosphere, representing 11 percent of total gross US CO₂ emissions in 2000; Warren Wilson's forest likely constitutes a significant carbon sink for the College. Yes, research is underway related to this.
- Seek assistance from the US Forest Service, Oak Ridge National Laboratory and the National Climatic Data Center to measure the College's carbon sink. Not yet secured.
- Consider third-party verification for the College Forest's carbon sequestration to offset the College's international travel. Explored and not valid.
- Conduct a Biogas study of the College's agricultural operations. Planned for 2011-2012.
- Continue to work with the IPCC scientists at Asheville's National Climatic Data Center to stay abreast of current research. Research needs refreshing.
- Encourage student research projects in climate change and mitigation via student grant programs (see Funding section). Yes, Presidents Climate Action Fund and Campus Seed Grants encourage this research and application of findings.
- Cultivate student interest in using the capstone Natural Science Seminar research required of all science majors to investigate climate change issues on campus and in the region. Ongoing.
- Engage the business and economics department in Return on Investment research for energy reduction initiatives campus-wide. To be undertaken.
- Continue to engage psychology faculty in research on campus related to behavior change and climate action. To be refreshed in Fall 2011.
- Collect and publicize faculty and student research on issues related to climate change. Not yet addressed.

DATA

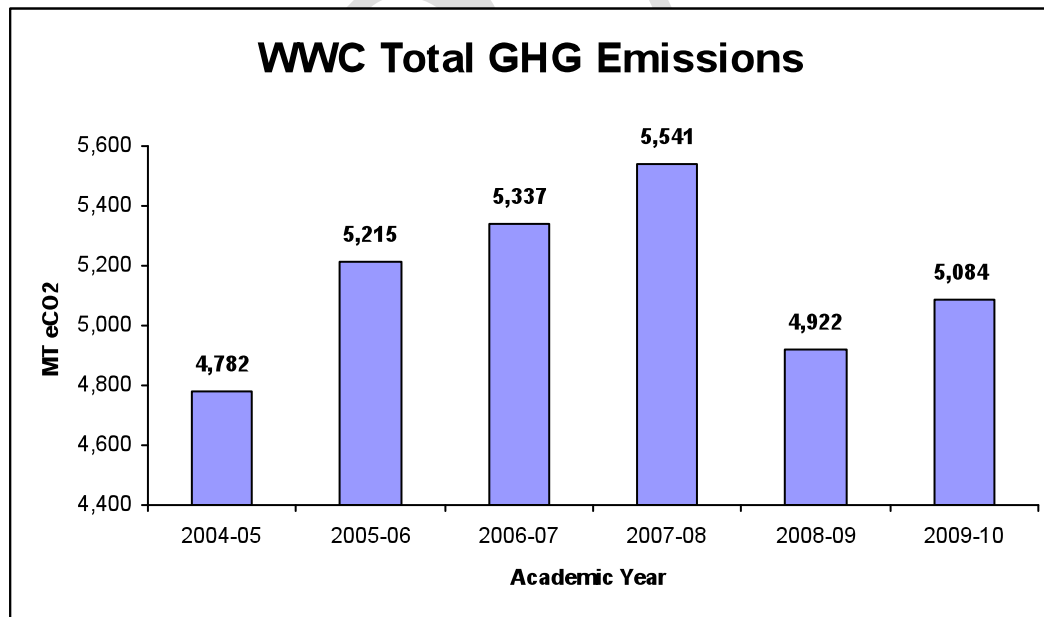
Warren Wilson College Select Greenhouse Gas Emissions Summary 2007 – 2010

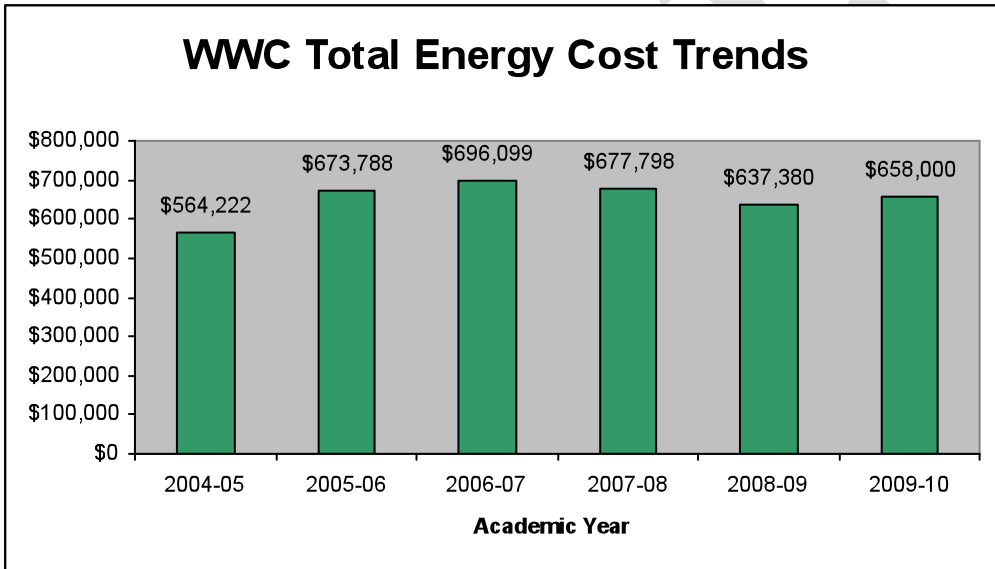
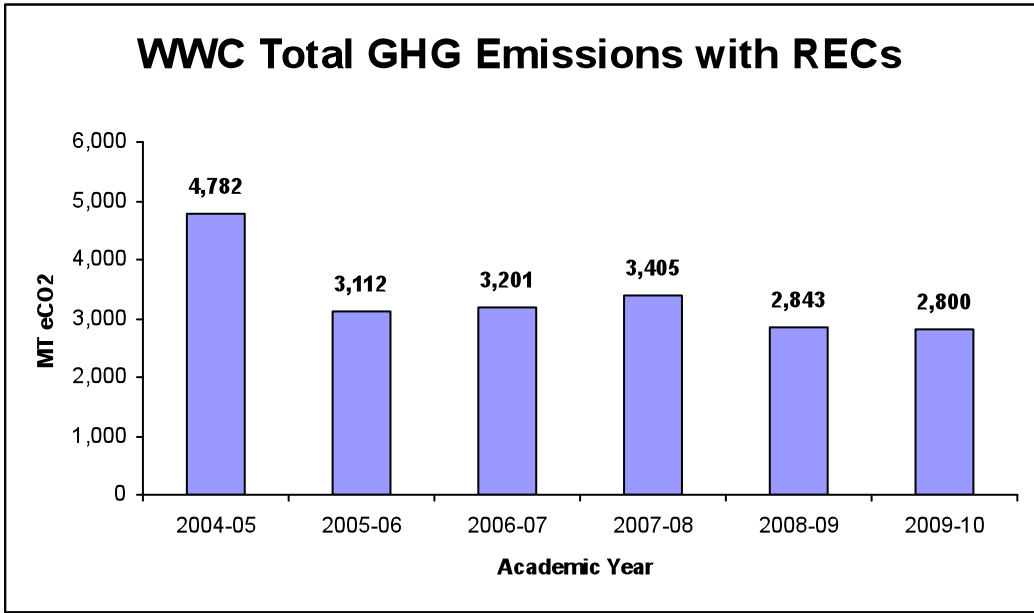
		Campus Pop 1068 2007-08 (CAP baseline)	Campus Pop 1128 2008-2009	Campus Pop 1152 2009-2010 (yr.1 CAP measure)	% Change 07/08 - 09/10 (yr. 1 CAP performance)	10/11 Q1 and Q2 Compared to Q1 and Q2 07/08 electric use	10/11 Q1 and Q2 compared to Q1 and Q2 07/08 Natural gas use
Electricity	Use (kWh)*	4426319	4312467	4732770	+6.48	-3%	-8%
	Cost	344,432 @\$.08/kw	349,732 @\$.08/kw	397,235 @\$.12/kw	+13.29		
	Emissions (MT eCO2)	2,086.70	2,069.80	2,271.50	+8.2		
Nat. Gas	Use (Therms)*	227828	240465	243521	+6.44		
	Cost	\$185,873 @\$.81/therm	\$223,539 @\$.93/therm	\$202,080 @\$.83/therm	+8.02		

	Emissions (MT eCO2)	1,205.80	1,277.10	1,296.10	+6.97		
Fleet Fuel	Use (gallons)	29857	26613	32939	+9.36		10/11 Q1 and Q2 compared to Q1 and Q2 07/08 +32%
	Cost	\$88,239 @\$2.95/gal.	\$60,337 @\$2.27/gal.	\$63,619 @\$1.93/gal.	-38.7		
	Emissions (MT eCO2)	209.6	241.8	243	+13.8		
Commuting (F/S/ St)	Use (gallons)	22338	10258	9181	-143.31		
	Emissions (MT eCO2)	374.2	139.2	92.1	-306.30		
Internation. Flights	Use (Miles)	1,282,706	729,957	538590	-138.16		
	Emissions (MT eCO2)	996	567	418	-138.28		
Paper	Use (lbs)	17700	22200	21698	+18.43		
	Emissions (MT eCO2)	19.9	22.9	24.1	+17.43		

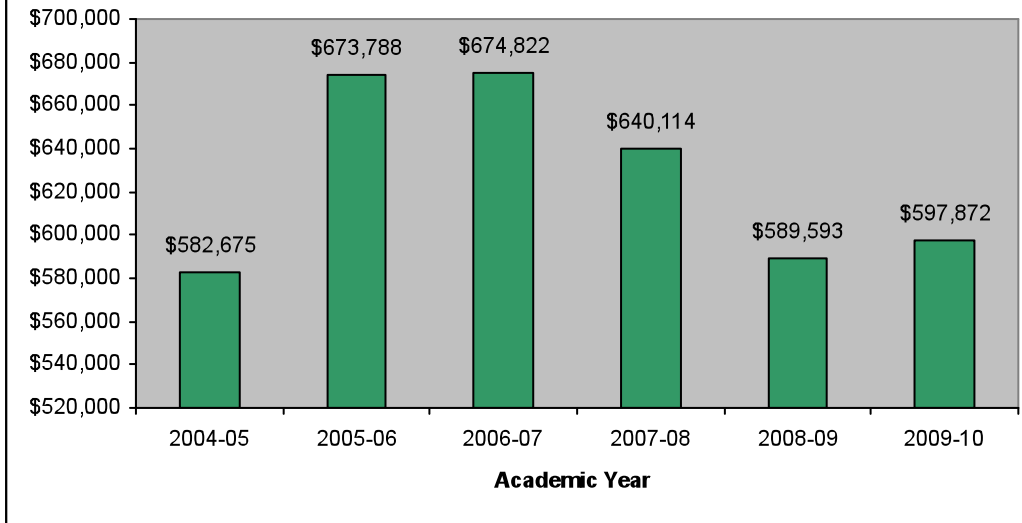
Weather variables*

HDD mean temp of 40	1,001	850	876	-12.5
CDD mean temp of 80	3,911	4,226	4,504	+13.2





WWC Total Energy Cost Trends (adjusted for inflation)





DRAFT