CONNECTICUT COLLEGE
State of the Environment Report for 2005-2006

Submitted by Amy Cabaniss,
Campus Environmental Coordinator
to the
Environmental Model Committee

November, 2006

Connecticut College
State of the Environment Report for 2005-2006

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Environmental Stewardship

Connecticut College is proud of its pioneering tradition of ecological awareness and responsibility and intends to remain a leader in safeguarding the environment. The arboretum campus is an ecological showpiece, and the College's procedures and programs aim to preserve and protect the environment, both locally and globally, and to prepare citizens sensitive to the need for responsible environmental stewardship.

--Excerpt from Connecticut College Mission Statement

The Environmental Model Committee (EMC)

The EMC was established in the early 1970s under the leadership of Professors Richard Goodwin and William Niering, who also created the innovative Human Ecology Program and major that is now Environmental Studies. The committee was first appointed by then President Charles Shain to support the commitment that Connecticut College's daily operations as a residential and academic community should and could provide a model for living in an environmentally sustainable fashion. It has operated continuously since that time, with members appointed by the President. The expectation is that, through its operations, the college can educate by example: after four years of living in an environmentally conscious community, students take the ideas, information and daily routines established here and transplant them to their lives beyond the campus. Over the years the ideal of working toward environmental sustainability has become part of the college ethos and it is an integral aspect of the college's identity for many students, staff, faculty and alumni. Environmental initiatives have also frequently resulted in positive and highly visible public recognition. National publicity for our purchase of electricity from sustainable sources demonstrated the public relations value such programs can generate.

The EMC provides leadership, develops policies, initiates programs, and coordinates community education that allow College operations to function as a model of environmental sustainability. Working with the appropriate administrative, faculty, and student offices, committees and groups, the EMC:

- Develops programs and policies to help conserve energy, water, and other natural resources.
- Provides research, support and advice to Physical Plant for maintaining and improving the college waste management program.
- Undertakes research on environmentally sustainable products and systems and recommends them to the appropriate departments.
- Monitors the college's progress towards sustainability and annually prepares a report on College environmental issues and initiatives for the EMC and college community.

EMC Members and Friends of EMC, 2005-2006

Administration and Staff

Vice President for Administration	Ulysses Hammond
Director of the Arboretum & Goodwin-Niering Ctr.	Glenn Dreyer
Campus Environmental Coordinator	Amy Cabaniss
Manager of Custodial Services	Ed Pistel
Director of Physical Plant	Jim Norton
Manager of Capital Projects	Steven George
Engineering Systems Manager	Peter Horgan
Director of Residential Life	Shelly Metivier
Grounds Supervisor	Jim Luce
Manager of Printing Services	Chris Barclay
Director of Environmental Health & Safety	Steve Langlois
Director of Media Relations	Eric Cárdenas
Library/Information Services Representative	Gary Tiller
Director of Dining Services	Greg Hopkins

Faculty

Director of the Goodwin-Niering Center	Bob Askins
2004-2007 Faculty Appointee	Candace Howes
2005-2008 Faculty Appointee (1 year replacement for Gary Parker)	Ann Bernhard
2004-2007 Faculty Appointee	Gerald Visgilio

Students

SGA Senator	Beannett Zylber
SGA Senator	Maureen Durkin
Student at Large	Sarah Allen
Student at Large	Craig McCarrick

Friends of EMC

Associate Director, Goodwin-Niering Center	Diana Whitelaw
Center Assistant, Goodwin-Niering Center	Michele Crowley, Mary Villa
Senior Operations Manager, Administration	Vicki Baron
Custodial Supervisor, Physical Plant	Janet Messina
Web Content Editor, College Relations	Holly Camerota
Coordinator, Corporate and Foundation Relations, Advancement	Kristin Geshel
Students (Renewable Energy Club, SAVE, SGA)	Michael Conti (REC) Kathryn Gutleber, Sara Jayanthi (REC), Randy Jones (REC), Joanna McClintick (SAVE) Eddie Slade (SGA)

Part 1: Summary of 2005-2006 Sustainability Initiatives

Connecticut College has adopted strategies to systematically address the sustainability issues of the institution. Environmental stewardship is addressed in the college Mission Statement and executed via committees, policies, programs and practices. Additionally, the Campus Environmental Coordinator position, historically an internship, became a full-time professional administrative position in 2005. The responsibility of the Coordinator is to lead the college in non-academic environmental activities on campus to further the institution's sustainability efforts.

As Connecticut College environmental stewards, the Environmental Model Committee (EMC) members worked diligently during the 2005-2006 school year to tackle these key environmental issues on campus: energy conservation, renewable energy, recycling, "green" building and communications. Due to the work and collaboration of staff, faculty and students, significant progress was made toward campus environmental sustainability. This year, an EMC subcommittee structure was instituted. Comprised of EMC members and other volunteers, the subcommittees met monthly to discuss the key issues listed above. Each of the five subcommittees included a chairperson, staff, faculty, student representatives and the Campus Environmental Coordinator.

Energy

Energy Conservation & Efficiency

The trend in campus electricity purchase has been upward since tracking began in 1990. (Please see Fig. 1) Energy conservation measures were given priority by the EMC in 2005-2006 due to the financial burden of energy use on campus. The campus' consumption of 15,795,743 kWh of electricity plus the rise in fuel costs necessitated actions to mitigate excessive energy use.

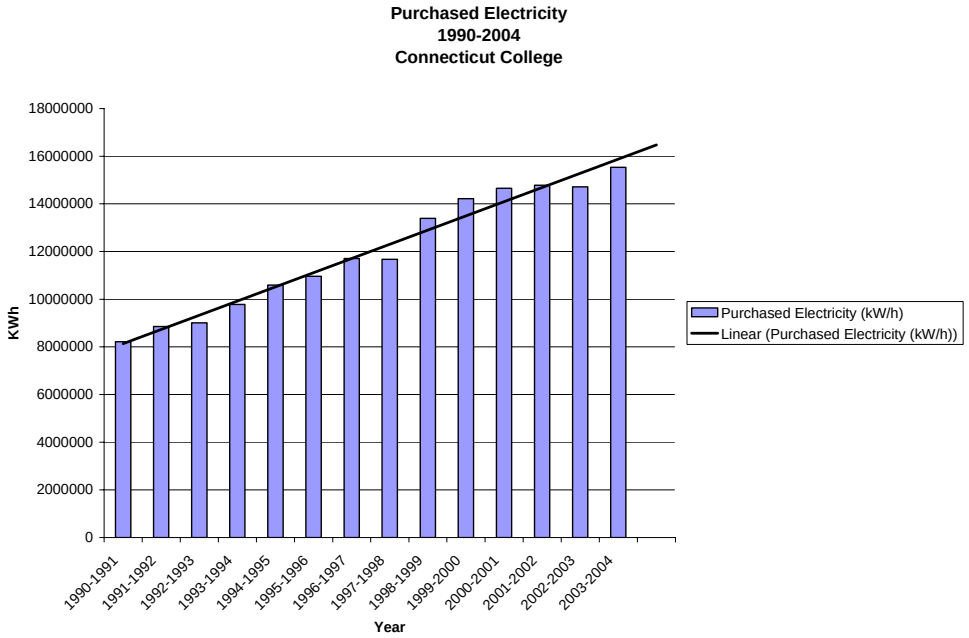

Figure 1. 1990-2004 Purchased Electricity, Connecticut College

To improve energy efficiency and conservation on campus, a number of energy-saving initiatives took place this school year. These include:

- *Vending Misers*® - Using the Environmental Conservation and Efficiency Fund (ECEF) established by the EMC in May 2005, the first ECEF purchase was made this year. Ten Vending Misers® were purchased and installed with assistance to Peter Horgan from Renewable Energy Club and SAVE members. The Vending Misers are on machines in Cummings, the AC, Plant, Branford, JA, Windham and Bradford. Use of the Misers to power down the machines when not in use, results in an estimated savings of $1,500/year. Purchase/installation – publicized in *Source* and on Connecticut Public Television (CPTV).
- *Compact fluorescent light bulbs* (CFLs) were co-purchased by the Arboretum and Renewable Energy Club in an effort to decrease energy consumption in dorms. CFLs use 70% less energy than incandescent bulbs and last 10 times longer. The Renewable Energy Club members undertook a door-to-door bulb exchange with assistance from House Environmental Representatives and distributed 900 bulbs. Savings: 46 kWh per bulb per year or 41,400 kWh for 900 bulbs; financial savings estimated at $3,915 ($4,140 minus the $225 paid for the CFLs). The CFL drive was publicized in *Source, Voice,* on the CC website and on CPTV.
- *Energy Saving Recommendations* - The EMC and EMC Subcommittee on Energy Conservation explored options for further reducing energy use on campus. Computations done by Gary Tiller of IS showed an estimated saving of $29,643.12/schoolyear if a computer shut-down program were to be instituted across campus. Specific recommendations for energy conservation were provided this year via an all-campus letter by Ulysses Hammond, *Source* articles, small group presentations and other venues. A "Dial Down" campaign was proposed by the EMC Subcommittee on Energy Conservation, to lower the Building Automation System heat setting and a reduction was initiated by Physical Plant.
- *Greenhouse Gas Emissions* – Elizabeth Parillo ('07), the Summer Sustainability Intern, updated the GHG emission report for the college using the Clean Air-Cool Planet e-calculator and format. This report updates the previous 2003 report by student, Jennifer Dziubeck that covered academic years, 1990-2002. The direct emissions of carbon dioxide and other greenhouse gases including nitrous oxide, methane, and halocarbons at Connecticut College increased by about 25%, from 11,851 metric tonnes of CO_2 in 1990 to the emission of 14,834 metric tonnes of CO_2 in 2002. In 2006, total emissions of carbon dioxide and other greenhouse gases at CC equaled 11,181 metric tonnes of CO_2. A majority of these emissions reflect the amount of on-campus stationary energy sources that account for an estimated annual 53%, and the amount of electricity purchased by the college that accounts for about 45% of annual emissions. On-campus stationary sources use oil, natural gas, and propane to run the campus heat-generating boilers. Energy use and emissions per student increased in the new millennium and remains high. (*Connecticut College Greenhouse Gas Emissions Inventory Update, July, 2006*).

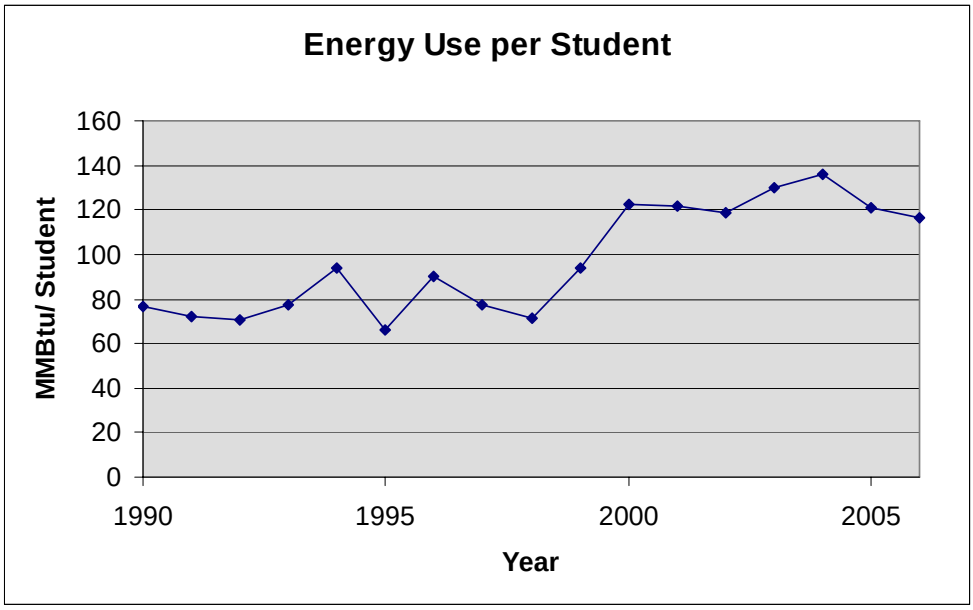

Figure 2: 1990-2006 Energy use per student in MMBTU/student/year
[Note: Because BTUs are measurements of energy consumption, they can be converted to kilowatt-hours (3412 BTUs = 1 kWh) or joules (1 BTU = 1,055.06 joules). MBTU stands for one million BTUs, also occasionally expressed as MMBTU.]

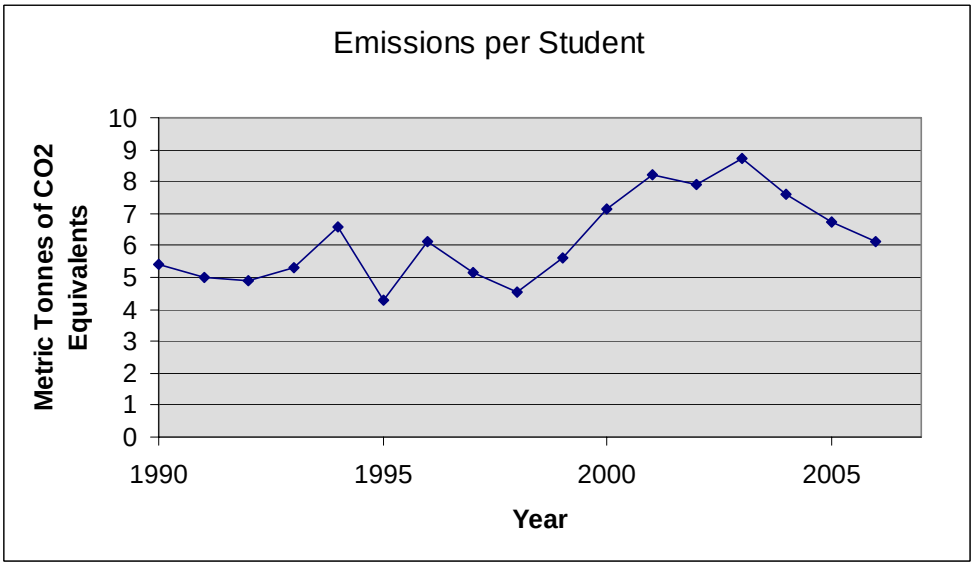

Figure 3: 1990-2006 Emissions per student - metric tonnes CO_2 equivalents/student/year

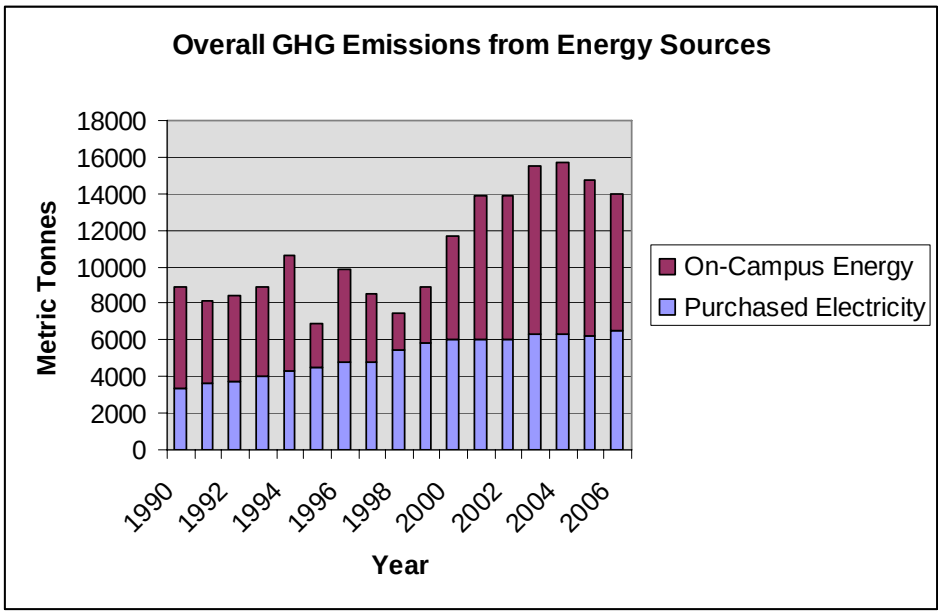

Figure 4: 1990-2006 overall greenhouse gas emissions generated by campus energy use - metric tonnes of CO_2 equivalents

Renewable Energy

In order to decrease our dependence on non-renewable fossil fuels and nuclear power, the EMC has examined renewable energy options. A number of renewable energy initiatives took place during the year, including:

- *Purchase of Green-e® Certified, 100% wind Renewable Energy Certificates (RECs)* from 3 Phases Energy Services (CA) for one year (July 1, 2005–June 30, 2006) to offset 7,500,000 kWh, equal to nearly half of our electricity purchase. The estimated environmental impact of offsetting 50% of our total energy use is prevention of 10 million pounds of CO_2 emission. This is roughly equivalent to taking 978 cars off the road or planting 1,281 acres of trees annually, according to 3 Phases Energy. Funding for the REC purchase ($18,750) comes from the student comprehensive fee surcharge of $25/student. This purchase is permissible under the Renewable Energy Policy and was supported by the EMC, Renewable Energy Club and SGA. Announcement of the REC purchase included: posters placed around campus, articles on the CC website and in *Source*, *The Day*, RenewableEnergyAccess.com and likely elsewhere given that press releases were sent out by CC and by 3 Phases Energy. The RECs were also mentioned in a CPTV program on energy. Attestation of the REC generation was received at the conclusion of the summer.

Academic Year	Vendor	Green Electricity Purchased (kWh)	Total Electricity Purchased at CC (kWh)	% of Electricity Off-set
2001 - 2002	Connecticut Energy Cooperative	Exact Amount Unknown (direct power purchase)	14,782,706	15 - 20%
2002 - 2003	EAD Environmental	3,200,000 (wind energy credits)	14,712,876	24.75%
2003 - 2004	EAD Environmental	6,316,667 (wind energy credits)	15,534,784	40.66%
2004 - 2005	EAD Environmental	6,316,667 (wind energy credits)	15,192,077	41.58%
2005 - 2006	3 Phases Energy Services	7,500,000 (wind energy credits)	15,795,743	47.48%

Table 1. Renewable Energy Purchases - Direct Power and Renewable Energy Credits

- *Renewable energy presentations* –During "Earth Week," Dr. Herster Barres, Director of ReForest the Tropics (Mystic, CT) presented the CC Carbon-Offset Forest Project during Common Hour. The 37-acre forest was planted 6 years ago in Costa Rica to offset 593 annual tonnes of CO_2 from electrical use in Crozier-Williams. This CC forest, dedicated as the William Niering Memorial Forest, is part of an applied research program on development of economic farm forestry intended to balance US carbon emissions and mitigate climate change. An estimated 25 people attended. This presentation was sponsored by the Goodwin-Niering Center. Dr. Pavlides, Director of the Wind Power Rhode Island Project and an AIA professor of Architecture at Roger Williams University, provided a special Earth Week presentation entitled, "Security, Sustainability, and Spirituality and Wind Power." This lecture, attended by nearly 40 people, addressed the impact of wind power on economic sustainability, security for human and wildlife health, and expressions of beauty and spirituality in the landscape. The presentation was hosted by the Renewable Energy Club. Another Earth Week, Common Hour presentation focused on wind energy. A panel of individuals from the Northeast Sustainable Energy Association, Energy Management, Inc. and 3 Phases Energy Services discussed energy use and wind energy, factors involved in siting a wind turbine and CC's purchase of Renewable Energy Certificates. Nearly 50 people attended. The Renewable Energy Club was the sponsor. This presentation and the presentation by
  Dr. Pavlides were highlighted in an article in the Shore Publishing papers: *Waterford Times*, *New London Times* and *Lyme Times.*
- *New England Renewable Energy Purchasers Program* – CC joined NE-REP along with 21 other companies that consume at least 1,000,000 kWh of electricity at Connecticut facilities. NE-REP involves informational workshops and meetings and provides opportunities for collective proposal requests and purchases of renewable energy resources. NE-REP is a program of the Center for Resource Solutions, Think Energy and SmartPower.
- *Solar* – The metered photovoltaic solar panels atop Park dormitory are generating an estimated 22 kWh/day or 7,033 kWh for the year. The potential is 7,920 kWh. Interest

by EMC was expressed this year in solar street lighting and a preliminary investigation into hat-box style lighting was done in consideration of light specifications in the CC master plan. Physical Plant is willing to cover expenses for one street light as a pilot project and will re-address this plan in Fall, 2006.

- *Wind Feasibility Study* – After considering different renewable energy options, the EMC chose to undertake a wind feasibility study to determine if an on-campus wind turbine is feasible. A Request for Qualifications was sent out to 6 firms that expressed interest: AWS Truewind (NY), Boreal Renewable Energy Development (MA), ESS Group, Inc. (MA), Global Energy Concepts (WA), Lorax Energy Systems (RI) and R.W. Beck (MA). Statements of Qualification were received in May and reviewed by the Wind Feasibility Team, an ad-hoc committee of the EMC. AWS Truewind and a collaborative of GEC/RWB were interviewed and provided a guided tour by Peter Horgan and review team members. Each of the two firms was subsequently provided with Requests for Proposals for the project. GEC/RWB was selected and a contract requested in August, 2006 for a Phase I site evaluation including a wind assessment. Phase II investigation of other parameters such as environmental impact assessment, economic factor consideration, scale determination and interconnection analysis. A final report is due from GEC/RWB in May, 2007. Funding for this initiative comes from the student comprehensive fee surcharge of $25/student that is designated for renewable energy under the Renewable Energy Policy.
- *Connecticut Clean Energy Fund* – In looking ahead to possibly constructing a wind turbine on campus, a relationship was forged with the Connecticut Clean Energy Fund (CCEF) based in Rocky Hill, CT, that began with an April, 2006 meeting with Glenn Dreyer. CCEF funding comes from a surcharge on electric ratepayers' utility bills and grant monies are available until June 30, 2007. If data is favorable in the wind feasibility study report, a grant request will be made to CCEF by this deadline. CCEF prefers early stage involvement with commercial, industrial and institutional entities seeking funding through the On-site Renewable Distributed Generation (DG) Program fund that is set up for renewable energy installations in Connecticut. Patrick O'Neill, CCEF Project Manager, was involved as a non-voting member in the firm review process.
- *Energy conservation and renewable energy surveys* – The Renewable Energy Club solicited responses from students regarding various energy-related topics that resulted in a response of 505 or almost 30% of those queried. Over half agreed strongly that CC should use renewable energy such as solar, wind power or renewable energy certificates. Sixty-seven percent of respondents stated they would support construction of an on-campus wind turbine. An EMC-generated survey of faculty and staff had similar results. Seventy-eight percent of respondents said they would support a project to build a turbine on campus if the feasibility study were to indicate that the investment in a turbine could be repaid in less than five years and generate at least 10 percent of the campus' electrical needs. About three quarters of respondents said they have seen a wind turbine and, while several indicated a neutral response to them visually, only seven percent of respondents find wind turbines aesthetically unpleasant. Nearly 75 percent of respondents support the College's purchase of electricity generated by renewable energy sources such as wind power, solar and/or Renewable Energy Certificates, even if it were to pay slightly more per kilowatt hour as from nonrenewable sources. Complete survey results can be obtained from Amy Cabaniss, Campus Environmental Coordinator.

Waste Management

Recycling

Connecticut College is committed to recycling and proper waste management. Between 1989 and 2005, the average amount of trash generated by the college was 448 tons. The average number of tons of recyclables was 204 tons. The campus recycling rate has historically been approximately 31.4%. (The averages exclude years for which data is not available.)

Year	Trash (tons)	Recycling (tons)	Total weight (tons)	% recycled
1989-1990	397	199	597	33
1990-1991	427	194	621	31
1991-1992	439	231	670	35
1992-1993	422	217	639	34
1993-1994	406	225	632	36
1994-1995	433	216	649	33
1995-1996	466	214	680	31
1996-1997	433	201	634	32
1997-1998	367	216	583	37
1998-1999	*457	no data	no data	no data
1999-2000	*463	no data	no data	no data
2000-2001	480	209	689	30
2001-2002	526	213	739	29
2002-2003	no data	no data	no data	no data
2003-2004	526	156	682	23
2004-2005	502	154	657	23
2005-2006	721	690	1,411	49

Table 2. Tonnage of Trash and Recyclables, 1989 - 2005

In 2005-2006, the percentage of materials discarded as trash was 51% and 49% of discarded material was recycled. The recycling tonnage is high because it includes the college's bulky waste recycling (in addition to bottles, cans, paper, etc.) that is not reflected in prior year computations. Despite this, the campus recycling rate can also be attributable to a few key factors. The collection of paper was made easier through commingling of office paper, magazines and cardboard for a 'mixed paper' collection. Also, recycling awareness was increased along with competitive interest during the intercollegiate recycling competition, RecycleMania. Finally, the infrastructure was improved somewhat with a count and replacement of many recycling bins.

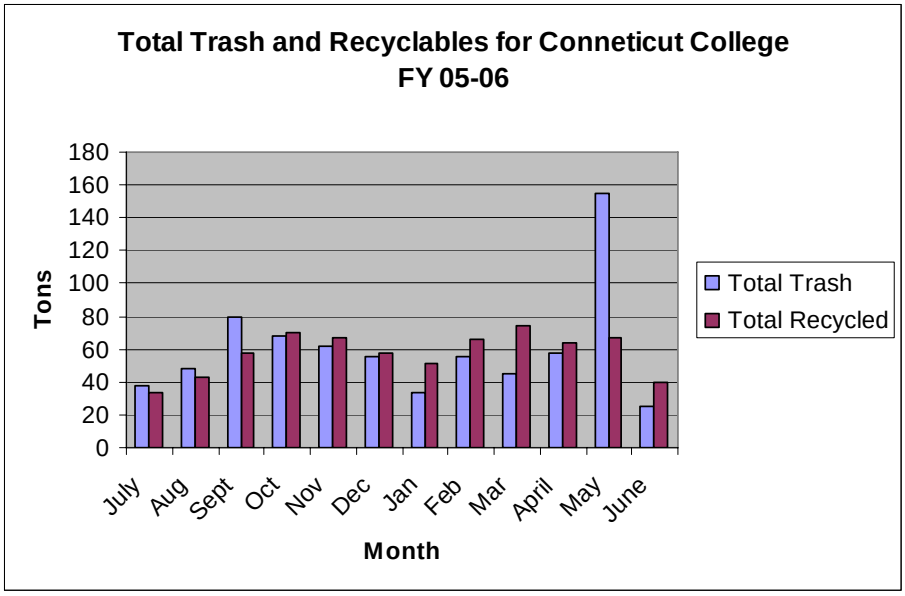

Figure 5. Monthly tonnage of campus trash and recyclable materials

In Figure 5, it is obvious that in May there was a great increase in the amount of trash generated. While not confirmed, it is likely due to students' discarded personal belongings as they moved out of the residence halls. The complete report by Summer Sustainability Intern, Elizabeth Parillo, *Trash and Recyclable Inventory for Fiscal Year 2005-2006,* can be obtained from Amy Cabaniss.

- *Waste hauler contract* - The college entered into a new solid waste and recyclable material removal agreement at the end of 2005 that consisted of: installation, rental and servicing of one 45 yd. dumpster and compactor for mixed paper, one 15 yd. dumpster for metal, one 30 yd. dumpster for bulky waste and an occasional rental of additional dumpsters. This new 5 year contract made it possible for the campus community members to switch from sorting office paper and newspaper and magazines to combining these materials plus cardboard for 'mixed paper' collection and recycling. The intention is to make individual recycling easier (i.e. less sorting required) in an effort to increase the recycling rate on campus.
- *Recycling Bins* – In an effort to further build and refine the recycling infrastructure on campus, additional bins were purchased and placed, such as in the Athletic Center. Randy Jones (06) also performed an assessment of the existing common area recycling bins to determine the count, placement and need. In light of the new mixed paper system, bin re-labeling was done and needs to continue.
- *RecycleMania* – Connecticut College enrolled in a 93-college/university, 10-week recycling competition, RecycleMania – Per Capita Classic. The Per Capita Classic is the traditional RecycleMania competition format in which schools compete to see who can collect the most recyclables. Between January 29th and April 8th, Jim Luce and Randy Jones ('06) worked together to track and report CC's recyclable material weights (divided by campus population) to the competition organizers. The amount of recyclables collected per person at CC ranged from a low of 1.21 (during spring break) to 10.93 lbs. in the final week of the competition. The average weekly rate (excluding the 2-week break) was 7.66 lbs. per person. This is approximately 17,300 lbs. of recyclables diverted from the waste stream in one week. Total recyclables collected during the 10 weeks is

126,995 lbs or 63.5 tons. CC started and finished in the Top 5 of 93, bested only by Oregon State, Cal State San Marcos, Miami University and Kalamazoo College. The college was the top competitor amongst CT colleges and the New England Small College Athletic Conference schools. Students, faculty and staff stepped up their recycling efforts during the competition. Staff in Becker House for example, cleared out barrels of shredded paper. SGA hosted a 1-day recycling drive, bringing two truckloads to the transfer station. Various avenues were taken to get the word out on campus about the competition. A banner was displayed in Cro and Harris. Posters were hung around campus and in the dorms with assistance from the House Environmental Reps. Articles were in *Source**, *Voice*, SGA *On the Can*, *This Week at CC* and on the CC website. *Through an arrangement with College Relations, RecycleMania was highlighted in each *Source* during and right after, the competition. Additional press included an article in *The Day*, a brief segment on WNPR "All Things Considered" and the CT DEP newsletter *P2View*, along with other exposure. CC's involvement in RecycleMania was supported by the Goodwin-Niering Center, EMC, EMC Recycling Subcommittee, Renewable Energy Club, SAVE and House and Building Environmental Representatives. SAVE members periodically staffed tables accepting a Pledge to Recycle More card from each of nearly 200 students, faculty and staff.

Per Person Recyclables Collected Each Week at CC in the

RecycleMania –Per Capita Classic Competition

Week	Per Capita Classic
	weekly lbs recyclables/person
1	6.79
2	6.74
3	6.78
4	5.13
5	6.36
6	5.21
7	1.53
8	1.21
9	5.55
10	10.93

Table 3. RecycleMania 2006 Weekly Results

CC Ranking Each Week in RecycleMania-Targeted Materials Competitions

Week	Paper	Corrugated Cardboard	Bottles and Cans	Food Service Organics
	weekly lbs paper/person	weekly lbs corrugated cardboard/person	weekly lbs bottles and cans/person	weekly lbs food service organics/person
1	2.92	2.33	1.54	3.31
2	3.67	1.68	1.39	5.45
3	3.32	1.95	1.51	5.45
4	1.77	1.82	1.53	5.45
5	3.52	1.14	1.69	5.45
6	2.01	1.92	1.29	5.45
7	0.44	0.53	0.56	0.62
8	0.44	0.44	0.33	0.62
9	1.77	1.82	1.96	5.45
10	6.22	3.05	1.66	5.45

Table 4. RecycleMania 2006 Targeted Materials Results

RecycleMania 06 - Per Capita Classic (through week 10) – Excerpt on Final Ranking

Rank	School Name
1	Oregon State University
2	Cal State San Marcos
3	Miami University
4	Kalamazoo College
5	Connecticut College

Table 5. Top 5 Ranking of U.S. Colleges and Universities for RecycleMania 2006

Green Building

In 2001, a Connecticut College Green Building Policy was drafted to reduce the environmental impact of campus construction projects, improve the quality of residential and work environments, and to maintain the College's position as an environmental leader. For appropriate new buildings and major renovation projects, the policy indicates the necessary use of a set of recognized environmental guidelines (such as Leadership in Energy and Environmental Design), the use of green building materials, cleaning products, and maintenance methods, the

use of energy efficient systems, the installation of water conserving systems, and the improvement of indoor air quality through use of appropriate building materials and ventilation systems.

The EMC Subcommittee on Green Building (a.k.a. Green Team) met several times during the school year primarily to discuss the major renovations of Marshall and Hamilton residence halls in the summer. This part of the "Plex" is being renovated in two phases by Konover Construction Corporation – this year the façade or exterior "envelope" was reconstructed with new siding, windows, roof covering and other features. Next summer, the interior renovations will be undertaken, including new wiring, furniture, etc. A number of the renovation efforts corresponded with the Leadership in Energy and Environmental Design (LEED®) Green Building Rating System for New Construction (LEED-NC version 2.2) even though the college was not seeking LEED certification. LEED standards are set by the U.S. Green Building Council (USGBC) for sustainable sites, water efficiency, energy and atmosphere, materials and resources, indoor air quality and innovation in design. During the 2006 summer, Elizabeth Parillo, Summer Sustainability Intern, worked with Konover Construction Corporation Project Engineer, Lisa Cenotti, to document renovation progress and LEED standard adherence. The USGBC - LEED credits informally considered in the Plex summer renovations were:

Sustainable Sites

- SS Credit 4.2 Alternative Transportation: Bicycle Storage and Changing Rooms
- SS Credit 4.4 Alternative Transportation: Parking Capacity
- SS Credit 5.2 Site Development: Maximize Open Space
- SS Credit 7.2 Heat Island Effect: Roof

Materials and Resources

- M&R Prereq1 Storage and Collection of Recyclables
- M&R Credit 2.1 Construction and Waste Management: Divert 50% from disposal
- M&R Credit 2.2 Construction and Waste Management: Divert 75% from disposal
- M&R Credit 4.1 10% Recycled Content of Materials
- M&R Credit 4.2 20% Recycled Content of Materials
- M&R Credit 5.1 Regional Materials: 10% Extracted, processed & manufactured regionally
- M&R Credit 5.2 Regional Materials: 20% Extracted, processed & manufactured regionally

Indoor Environmental Quality

- EQ Prereq2 Environmental Tobacco Smoke (ETS) control
- EQ Credit 4.1 Low- Emitting Materials: Adhesives and Sealants
- IEQ Credit 4.2 Low- Emitting Materials: Paints and Coatings
- IEQ Credit 4.3 Low- Emitting Materials: Carpet Systems
- IEQ Credit 4.4 Low- Emitting Materials: Composite Wood & Agrifiber Products
- IEQ Credit 8.1 Daylight and Views: Daylight in 75% of Spaces
- IEQ Credit 8.2 Daylight and Views: Daylight in 90% of Spaces

The result of the assessment by Elizabeth Parillo, Summer Sustainability Intern, is the progress document, *Connecticut College and Green Building: A Documentation of the Renovations to Hamilton and Marshall Houses*, a copy of which can be obtained from Amy Cabaniss. A copy of the LEED Power Point presentation by Konover Construction to the EMC is also available from Amy Cabaniss. The assessment indicated that while progress was made toward sustainability in the building renovations, a more concerted and LEED-aligned effort is recommended on future projects. With regard to the Sustainable Sites credit, the heat island effect from the roof was minimized through roof replacement with a white PVC roofing membrane. Potable water is not used for irrigation thereby improving water use efficiency.

Window replacement, a new exterior insulation system (using an innovative AAC Block material) and new insulated roof were undertaken to optimize energy efficiency in Hamilton and Marshall. With respect to materials and resources, 100% of the existing walls and structure of the dormitories was maintained. More than 50% of the construction and demolition debris was recycled and some key materials contained recycled content, particularly steel and slag cement.

This is the first documentation effort of this sort on campus. While the College did not pursue formal USGBC-LEED certification for the dormitories due to renovation time constrictions and a limited construction budget, it used the LEED requirements as a guide for construction and renovation. Under the direction of Konover Construction staff, aspects of sustainable design and construction methods aligned with certain LEED requirements. Findings from the summer assessment will serve as a guide to expand and improve the College green building efforts in subsequent projects.

Other 2005-2006 Campus Sustainability Efforts

In addition to the sustainability initiatives addressed above, other sustainability efforts were made on campus. These include:

- Active student environmental groups: Renewable Energy Club, Students Against Violence to the Environment (SAVE), Sprout
- Earth Day 2006 at the Williams School – Several students and staff participated in the school's Earth Day event on Friday, April 21st.
- Earth Day 2006 – Students hosted an Earth Day celebration on Saturday, April 22nd in Crozier-Williams (due to rain).
- Pesticide-free gardening - Students and staff worked together to clear out the garden area by Earth House for an organic vegetable garden
- 2005 Northeast Campus Sustainability Consortium Conference at Harvard - attended by Amy Cabaniss; 2006 conference planning committee – Amy Cabaniss served as member
- The House Environmental Representatives and HER Coordinator roles and responsibilities were formalized and approved by SGA.
- The Building Environmental Representative program was reinvigorated and BERs and prospective BERs met several times to define roles and responsibilities, discuss environmental issues on campus and identify needs and related activities.

Part 2: Looking Ahead to the 2006-2007 Academic Year

EMC structure - The college administration has asked the EMC to review and clarify its structure, membership and procedures.

EMC Subcommittees – The subcommittee structure enables EMC to actively participate and make progress on a wide variety ofcampus environmental initiatives. The subcommittees set up during the 2005-2006 academic year proved to be effective in addressing environmental issues. The subcommittees were: Recycling, Energy Conservation and Efficiency, Renewable Energy, Green Buildings and Communications. These will continue during 2006-2007 with the addition of the Earth Day-Community Day subcommittee.

Most of the issues and initiatives addressed by the Environmental Model Committee in the 2005-2006 academic year will carry over into this year, for example, a goal contin ues to be improvement of the recycling infrastructure. With the goal of increasing the recycling rate on campus and decreasing the amount of trash generated, the College will enter into RecycleMania for a second year, broadening of our charge to include waste minimization. Energy conservation and efficiency education and initiatives will continue such as installing more Vending Misers on

vending machines to power them down when not in use. A solar street light is on the docket for Physical Plant to erect as a pilot project.

Earth Day-Community Day is scheduled for April 21st with a rain date of April 22nd. The Campus Environmental Coordinator is working with EMC members to form a multi-sector planning team to develop and implement an enhanced event with broader reach. The goal is to offer an organized, well-publicized and well-attended environmental awareness, education, entertainment and advocacy event that includes greater college community involvement and the involvement of individuals and groups from New London and surrounding towns.

The *wind feasibility study* that begins in September, 2006, is anticipated to continue through the academic year. Phase I involves assessing the campus wind resource, performing a site assessment for turbine placement and determining turbine size if appropriate. The necessity of a monitoring tower will be determined at this time. The scope of Phase II includes evaluating the transmission capacity and interconnection requirements as well as identifying environmental and regulatory issues and developing conceptual designs and cost estimates. The goal of this project is to determine the viability and scale of a wind turbine on campus.

Active participation by EMC members and Friends of EMC during the 2006-2007 academic year is anticipated and appreciated.

Respectfully submitted by Amy Cabaniss

Appendices

Environmental Model Committee
2005-2006 EMC Subcommittee Member List

Energy Conservation
Peter Horgan - Chair
Vicki Baron
Anne Bernhard
Gary Tiller
Joanna McClintock
Sara Allen

Renewable Energy
Gerald Visgilio – Chair
Diana Whitelaw
Peter Horgan
Randy Jones
Sara Jayanthi
Michael Conti

Recycling
Jim Luce - Chair
Jim Norton
Ed Pistel
Shelly Metivier
Greg Hopkins
Steve Langlois
Chris Barclay
Eddie Slade
Courtney Miville

Green Buildings
Glenn Dreyer – Chair
Steve George
Steve Langlois
Candace Howes
Craig McCarrick

Communications
Holly Camerota – Chair
Kathryn Gutleber

Ad-hoc Wind Feasibility Team
Eric Cárdenas
Glenn Dreyer
Peter Horgan
Randy Jones
Gerald Visgilio

Note: The Environmental Coordinator, Amy Cabaniss,was a member of each EMC Subcommittee and the ad-hoc wind feasibility team.

COPY of Ulysses Hammond's energy conservation letter to the CC community

To the Faculty, Staff and Students of Connecticut College:

It is hard to imagine anyone who is not aware of the tremendous increase in the cost of energy that has occurred over recent years and, especially, in the past few months. The prices for electricity, fuel oil, natural gas and gasoline have skyrocketed, and Connecticut College uses all of these in the daily operation of our facilities. Consequently, we are projecting energy costs for the current fiscal year to be $300,000 - $500,000 over budget. The college increased the energy budget from last year, but no one could have foreseen the dramatic rise that has taken place. In the past 12 months, oil has risen by about 50% and the cost of natural gas has doubled.

While the cost of energy may not be within our control, our consumption of it is. We need for every member of the college community to be watchful for places where energy is being wasted and cut back on consumption wherever it is possible to do so without negative impact. Physical Plant has been addressing this matter in a multi-prong approach. While many of our office buildings and residential halls are heated by steam, the Power House uses natural gas and fuel oil to produce it. Price caps and lock-ins are in place or in negotiation for these fuels wherever possible, as well as for the generation costs of our electricity. Lower wattage lighting and high-efficiency motors have been installed throughout campus. Night setback temperatures have been implemented and unnecessary fans and pumps have been turned off. Every effort has been made to address leaks in the steam system. Physical Plant cannot tackle this problem alone. Every one of us needs to help.

What can you do to conserve? First, simply apply many of the principles you use to keep your energy bills in check at home. Shut off lights when they are not needed. Keep the doors and windows closed in areas that are heated or air conditioned, and don't block heat registers and radiators. Report drafty windows and doors to Physical Plant. Turn down the heat a degree or two and dress according to the temperature. For every one degree reduction campus-wide from a set point of 72 degrees, it is estimated the college can avoid consuming 18,000 gallons of fuel this heating season.

Turning your computer monitor off at night can result in significant annual energy cost savings as it is estimated that there are more than 3,000 computers on campus. Also, if your computer has been programmed with a sleep mode, which reduces the amount of energy drawn during periods of inactivity, do no override that function.

These are just a few of the simple ways you can help. If we all raise our awareness of our consumption and make every effort to avoid waste, we hope to see a significant impact on energy usage around campus.