CAMPUS SUSTAINABILITY PLAN

2012

New Paltz
STATE UNIVERSITY OF NEW YORK

SUNY

CAMPUS SUSTAINABILITY PLAN

2012

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INTRODUCTION

Higher education institutions have an important role in addressing the deepening global environmental crisis. Colleges and universities have a responsibility to increase educational opportunities in environmental fields to meet growing demand, to supply the expertise and labor needed to contend with intensifying environmental problems, and to educate students in sustainable living and citizenship. As large institutions that consume considerable resources and energy, colleges must also commit to improving their own environmental performance, thus reducing ecological impacts and serving as models of sustainability for students and the public at large.

The State University of New York at New Paltz has a long history of engagement with environmental issues. During the 1970's, New Paltz had an interdisciplinary Innovative Studies Program that was at the cutting edge of experimentation with renewable energy, sustainable food systems, energy efficient building design, and other sustainability initiatives that are commonplace today. That program was discontinued in the 1980's, but New Paltz has renewed its commitment to environmental education and ecological sustainability.

In the last decade, the college has undertaken a number of infrastructure improvements and made policy reforms to advance environmental performance. From recycling improvements to energy efficiency measures to local food procurement, New Paltz has made positive strides in many areas. Environmental education has also expanded substantially, with two new academic programs added in the last ten years. For the last three years the college has been recognized for its environmental achievements in the Princeton Review's Guide to Green Colleges.

In 2008, the college became a signatory to the American College and University Presidents' Climate Commitment, a national program that facilitates the expansion of environmental education and research and to improve environmental performance on college campuses. As part of that program, the college created a formal Sustainability Committee in 2009 whose charge is to:

- Assist with the coordination and fulfillment of the American College and University Presidents' Climate Commitment by helping to develop and implement an action plan for the College to become climate neutral
- Educate faculty, staff, students and college offices about sustainability issues and opportunities; together with the Division of Student Affairs, encourage and support student leadership on climate neutrality
- Help incorporate environmental issues into the college's curriculum, research profile, and educational outreach
- Promote environmental stewardship as a hallmark of college operations, working with the appropriate administrative units

ENVIRONMENTAL RESPONSIBILITY

HIGHER EDUCATION INSTITUTIONS HAVE AN IMPORTANT ROLE IN ADDRESSING THE DEEPENING GLOBAL ENVIRONMENTAL CRISIS.

STATE UNIVERSITY OF NEW YORK AT NEW PALTZ HAS A LONG HISTORY OF ENGAGEMENT WITH ENVIRONMENTAL ISSUES.

The Sustainability Committee is situated within the faculty governance structure as a subcommittee of the Budget, Goals and Plans Committee, although it allows for representation for students, administrators and staff members in addition to faculty. This committee has undertaken the development of this Campus Sustainability Plan. It is designed to be a dynamic document, continually revisited, revised, and updated as new information and technology becomes available. It will serve as a guide for the college toward the achievement of full ecological sustainability in the coming decades. The timeline for achieving sustainability is long, but the plan includes a number of specific short- and medium- term actions that will yield measurable progress towards the ultimate goal. While serving as a blueprint throughout the process, these plans are to be reviewed on a bi-annual basis and revised in accordance with new developments.

This plan uses 2010 as a baseline year for most measures and is designed to allow for the achievement of full sustainability in fifty years. Some measures, such as the CO_2 emissions addressed in the Energy section are quantifiable, and for these, specific numeric targets are identified. Other areas have qualitative measures and goals. In all sections, action plans with short-term goals designed to be achievable within a time frame of five years or less are presented. The plan provides an overview of each of four major areas of environmental performance including Energy, Environmental Education, Land Use, and Solid Waste and Purchasing. Sub-topics in each section describe the current status and action plans.

ENERGY

Virtually all human activity requires the use of energy and energy use is involved in several of the four major areas under consideration in this document. For example, the construction and maintenance of buildings and grounds involves the use of energy as does the manufacture of purchased goods. This section is designed to address three core types of energy usage at the college: purchased electricity, on-campus central heating, and transportation carried out in association with college business. In addition, efforts at behavioral change as it relates to energy usage will also be addressed.

The sources of energy used to power the campus are of tremendous importance when considering greenhouse gas reductions. Different energy sources emit varying amounts of greenhouse gas; these range from coal, typically considered the most polluting fossil fuel source, to renewable sources, such as solar and geothermal energy that are responsible for few or no greenhouse gas emissions. Thus, energy sources are of utmost importance in our evaluation and proposed reduction of carbon footprint.

THE SOURCES OF ENERGY USED TO POWER THE CAMPUS ARE OF TREMENDOUS IMPORTANCE WHEN CONSIDERING GREENHOUSE GAS REDUCTIONS.

How energy is used and conserved is also crucial to understanding and reducing greenhouse gas emissions. This involves both the types of equipment in use, as well as the practices utilized by individual members of the campus community. Inefficient electronics and appliances and wasteful practices require changes in procurement and in the daily behaviors of students and employees on campus. What we purchase and use on campus and the ways in which members of the campus community can modify their behavior to reduce energy are an integral part of this plan.

Striving to conserve energy at SUNY New Paltz is nothing new. Over the last several years New Paltz has taken an aggressive position when it comes to reducing greenhouse emissions and saving energy. The

RECENT PROJECTS

NEW YORK STATE ENERGY RESEARCH & DEVELOPMENT AUTHORITY (NYSERDA)

- Green House Gas Inventory
- Solar Thermal Campus Study
- SCR Load Shed Reduction Program
- Energy Managements Upgrades
- Smart Plug Load Reduction for Computers
- Installation of campus-wide metering system

CENTRAL HUDSON

- Campus-wide efficient lighting upgrades
- Compact fluorescent replacement
- Central Plant lighting upgrade
- Occupancy sensor installation in some classrooms

AMERICAN RECOVERY & REINVESTMENT ACT (ARRA)

- 50kw Solar Array for the Wellness Center

OTHER PARTNERS AND PROJECTS

- WasteWise EPA reporting partner tracking waste
- Energy Star purchasing of approved products
- NuEnergen purchasing of gas and electric
- Association for the Advancement of Sustainability in Higher Education
- Resnick solar array

campus has embarked on a number of energy saving projects and has taken advantage of several funding sources to reduce the cost of implementing these measures and conducting associated studies. In the past, the college has worked with our local utility, Central Hudson, as well as the New York State Energy Research and Development Authority (NYSERDA) to leverage resources and develop projects. These efforts have paid off and the college was successful in obtaining over $550,000 in grants from both sources in recent years.

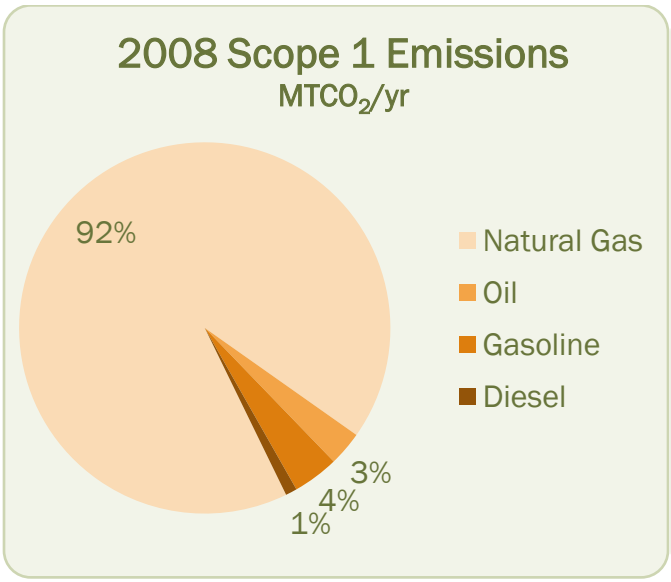
These measures have yielded significant reductions in CO_2 emissions. A campus Energy Use Profile Report produced in 2009 indicated that efficiencies were achieved in electricity usage despite an increase in the campus population. CO_2 released from electrical usage decreased from 13,749 metric tons in 2006 to 13,292 in 2008. The report stated that this savings resulted from "the installation of 4,000 compact fluorescent light bulbs in campus residence halls, campus-wide deployment of motion sensors in areas of variable space utilization" among other measures. Major CO_2 reductions were also achieved by shifting to less polluting natural gas thereby reducing oil consumption in the central heating plant. According to the report, between 2006 and 2008 CO_2 releases dropped from 11,010 tons to 8,928 tons, a 19% decrease. The report concluded:

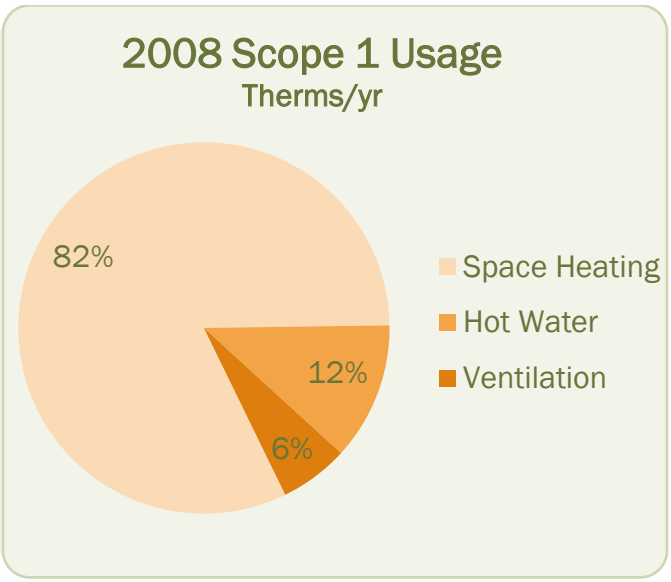
> *"The results of this inventory indicate that there was a relatively steep decline in … greenhouse gas emissions from 2006 to 2007. The campus … implemented aggressive efforts to reduce energy consumption resulting in reduced carbon emissions and energy usage while affecting a positive impact on the campus utility budget. These actions included … the decision to use more natural gas over fuel oil, better scheduling through the energy management system, and the decentralization of the central heating plant in summer months for more control."*

The American College and University Presidents' Climate Commitment (ACUPCC) defines Scope 1 emissions as those "that are directly related to campus operations and are under direct campus control, e.g., central heating plant." Emissions sources for Scope 1 include: distillate oil, natural gas, gasoline, and diesel fuel. Scope 2 emissions are those "directly related to campus operations but are not under direct campus control, e.g., purchased electricity." Scope 1 and 2 energy usage is easier to measure and manage than Scope 3 energy emissions, those associated with institutional related travel: commuting, the campus fleet, and employee travel.

Scope 1 Emissions Sources

Fiscal Year	Distillate Oil (Gallons)	Natural Gas (MMBtu)	Gas Fleet (Gallons)	Diesel Fleet (Gallons)
2006	86,441	156,246	35,901	6,839
2007	28,845	109,344	39,266	11,103
2008	3,212	81,807	40,266	6,839





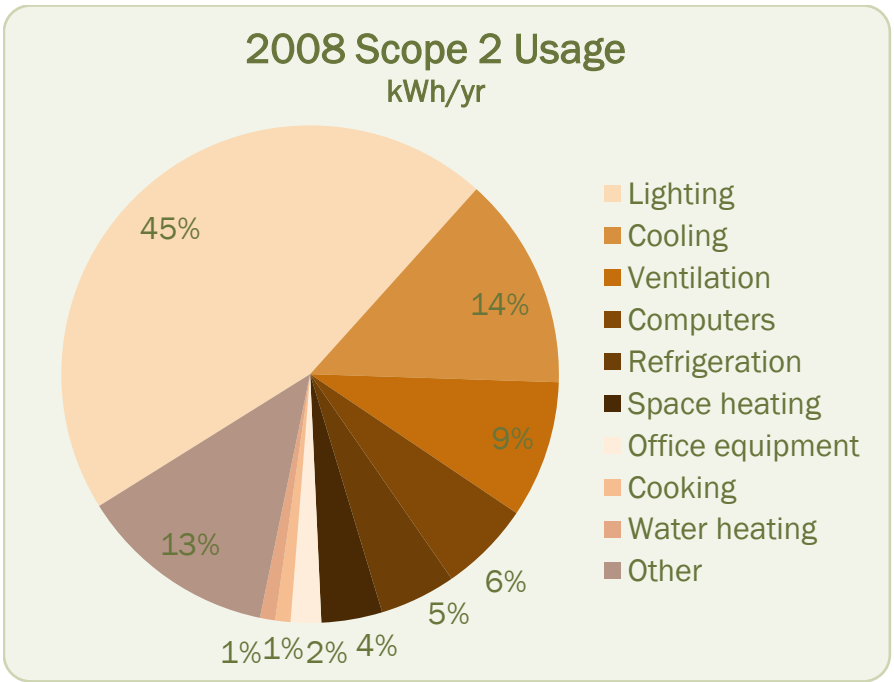
Source: EYP Architecture and Engineering

At 92%, natural gas is clearly the greatest contributor to Scope 1 emissions. In terms of usage, space heating accounts for the largest percentage, 82%.

Scope 2 Emissions Sources

Fiscal Year	Electricity (kWh)
2006	21,416,080
2007	22,223,230
2008	21,255,549

Forty-five percent of Scope 2 electricity emissions are the result of lighting on campus. Other significant contributors include cooling (14%) and ventilation (9%). Based on 2008 campus utility data, Scope 1 and 2 emissions generated approximately 23,000 metric tons of CO_2.



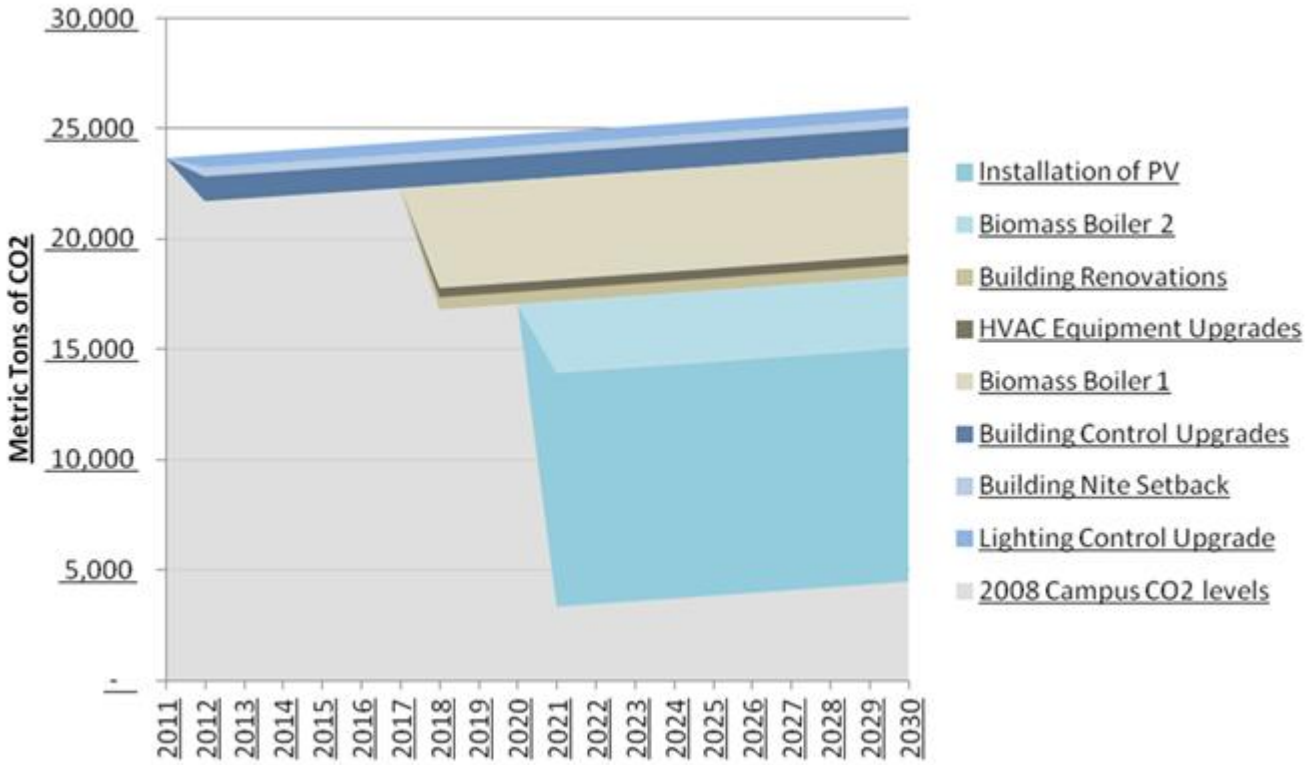
Source: EYP Architecture and Engineering

In order to formulate an effective long-term plan, the college intends to implement a three-phased approach to reduce carbon emissions over the next twenty years. The initial step will consist of several energy conservation strategies and upgrades of the existing campus-wide energy

management system. This phase of the plan will be implemented over the next five years. Next, the college will begin to invest in new energy efficient equipment over the following three years. In the final phase, the college will seek to implement cost-effective renewable energy projects to drive the college's carbon footprint as low as possible.

Based on current projections, the college expects that by the year 2030 Scope 1 and 2 emissions could be reduced by as much as 80% from 2008 levels. This does not include planned national or regional improvements in the environmental efficiency of power generation generally. In 2007, approximately 7% of energy entering the electrical grid in the United States came from renewable sources. The Obama Administration has set a goal of 25% renewable energy by 2025. Thus, in addition to the reduction in energy usage on campus, the energy that is used will yield lower CO_2 emissions. As with any ambitious long term project, New Paltz will adjust this plan on a yearly basis depending on changes in energy costs and resources available to support these initiatives, as well as advancements in existing or new energy technology. While not all aspects of the plan may be implemented as laid out here, this initial document will guide the college as it prepares for a zero-carbon emission sustainable-energy future.

Projected CO_2 Reduction Levels to Scope 1 and 2 Emissions



Source: EYP Architecture and Engineering

Conservation

The most cost effective way to conserve energy is not to use it in the first place. Although energy conservation is not the sole answer to the long-term problem of carbon emissions on the campus, it needs to be addressed before investing in more expensive ways of reducing the campus carbon footprint. Conservation, including lighting, heating and cooling controls, and reduced building use is an approach the campus believes can go a significant distance toward the goal of reducing the campus carbon footprint at a very favorable financial cost. Before embarking on other approaches,

the college will exert significant effort over the next five years to conserve as much energy as possible.

Conservation Action Plan

Lighting Controls estimated CO_2 reduction: 3%

- 92% of the campus does not employ lighting controls, so most lights are turned on and off using wall mounted switches. While education and behavioral change can reduce the unnecessary use of lighting, some lights are inevitably left on when not in use. To address this inefficiency, the college plans to install new wall/ceiling mounted occupancy sensors in areas in which it is technically and economically feasible to do so.

Controls Upgrade estimated CO_2 reduction: 5%

- 52% of the campus is not on the automated central building heating and cooling system. Therefore, 48% of buildings are operated with unitary controls which allow occupants to set and regulate their own temperature. To better manage room temperatures the college plans to expand the current energy management system to cover approximately 95% of the campus. The increased level of control will allow the campus to better regulate temperature set points, as well as implement other enhanced control strategies to help reduce overall carbon emissions.

Night Setback estimated CO_2 reduction: 2%

- 36% of the campus does not employ a nighttime temperature setback. Some of those buildings are operated with unitary controls and others have a BAS system that does not utilize a nighttime setback. With the upgrade of the control system, the college will have the ability to expand the level of control that it employs to include a night setback throughout the campus.

Campus Expansion and Building Use estimated CO_2 reduction: to be determined

- The college has the potential to reduce energy use on campus by taking whole buildings or parts of buildings off-line permanently or for temporary time periods when they are not in use or when they are not being used efficiently. The average campus building size is 37,481 square feet. Hypothetically, if this amount of square footage was taken off-line for one year, the college would reduce its carbon footprint by approximately 2%. Conversely, the college's carbon footprint will increase approximately 1% for every 20,000 square feet of building space that is added based on current efficiency levels. As the campus grows, new buildings could potentially increase the overall carbon footprint of the college. However, since all new buildings and renovations will be built to LEED standards or an equivalent, there may ultimately be increased energy efficiency and reduced CO_2 emissions in terms of facilities' footprint.

Efficiency

At the completion of the first stage of the energy reduction plan, the college will have implemented several measures and reduced energy consumption through various conservation efforts. In order to achieve further reductions in CO_2 emissions, it will be necessary to begin replacing existing equipment to take advantage of newer technologies and the increased efficiency they provide. This will be done through the purchase and implementation of advanced equipment during routine capital planning, as well as through the proposed installation of a supplemental biomass boiler for the central plant. The use of biomass as a fuel source for meeting even a portion of the campus energy needs will alone yield a very significant reduction in net greenhouse gas emissions. In addition, the college will continually evaluate newly emerging technologies which may be incorporated into this plan and to renovate and complete environmentally certified construction projects, as economic conditions allow.

Increase Purchase of Efficient Equipment — estimated CO_2 reduction: to be determined

- Replace equipment with newer technologies
- Purchase and implement advanced equipment during routine capital renovation and new building construction

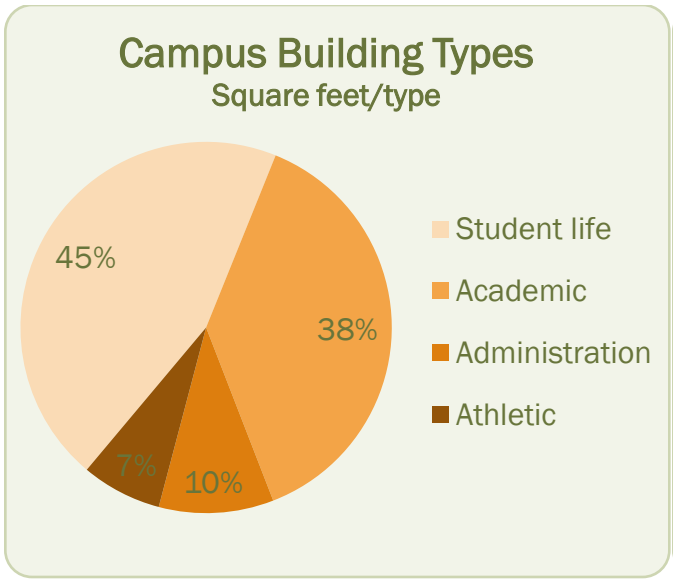
Biomass Boiler Installation — estimated CO_2 reduction: 20-34%

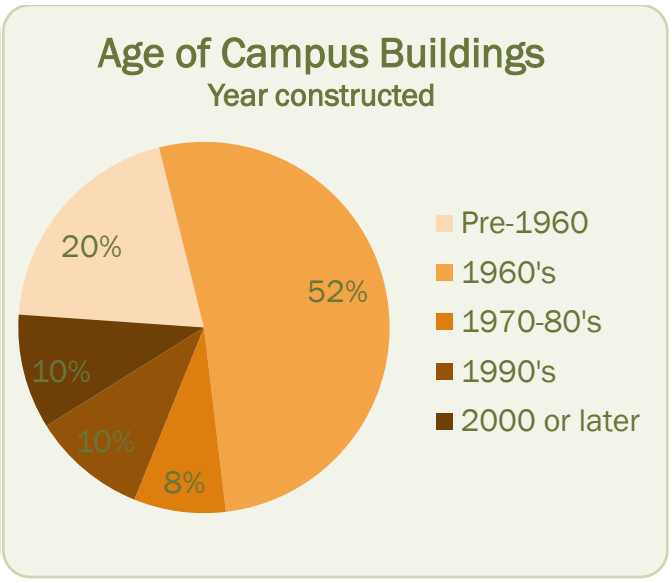
- Campus heat is provided by three main boilers at the central plant. One of the boilers is nearing the end of its useful life. When that boiler needs to be replaced, consideration will be given to replacing it with a dual fired biomass boiler. The operating assumption is that the new biomass boiler would replace the existing 300hp natural gas fired boiler. There is also an opportunity to increase the size of this boiler to 600hp. The goal of purchasing a biomass boiler will continue to be evaluated based on engineering concerns and the availability of a sufficient supply of a biomass fuel at a reasonable cost. However, the dual-fired feature of such a boiler would allow for the continued use of natural gas as a fuel source should biomass be unavailable or cost prohibitive in the short term. The use of gas could be phased out while the college identifies supplies of biomass and establishes relationships with suppliers of the material. Depending on the biomass utilized, the college's use of such material could also bolster local agricultural development benefitting the rural economy and affirming positive relationships between the college and area farmers. In any case, in addition to the potential environmental benefits, the ability to utilize different fuel sources will provide the college with flexibility should the cost of one fuel or another be more favorable at any given time.

Building Renovations — estimated CO_2 reduction: 2%

- While a few buildings on campus date back to the early 20th century, over half were constructed in the 1960's. About 20% of the roughly fifty buildings on campus were constructed prior to 1960, 10% were built in the 90's, and 10% since 2000. Only four buildings were constructed during the 1970's and 80's. Much of the building stock has not been upgraded since it was constructed, thus there is a backlog of buildings in need of renovation which is only now being undertaken. The oldest building on campus, Old Main, constructed in 1908, was recently renovated. It is the first LEED (Leadership in Energy and Environmental Design) certified building on campus. New York State Executive Order 111 requires that public buildings be built at least up to the LEED silver level standard. Approximately 13% of the campus building space is scheduled for renovation over the next several years. Planned renovations include the Smiley Arts Building, Sojourner Truth Library, the Wooster Science Building and Elting Gym. Typically, general renovations provide an increase in energy efficiency over older buildings. Depending on the condition of the building and the scope of the renovation, increases in energy efficiency will vary.

Recently renovated Old Main Building, the first LEED certified building on campus





Source: EYP Architecture and Engineering

Renewable Technology

In order to achieve further reductions in CO_2, the college will consider expanding the use of more energy efficient technologies and the implementation of on-site renewable energy. Based on current technologies the best additional energy development would be to expand the use of biomass at the central plant and to increase the amount of electrical energy generated by solar photovoltaic panels.

As of the date of this report, the college has already implemented several solar energy projects on campus totaling approximately 100Kw. The college installed a photovoltaic array on the roof of the Health and Wellness Center in 2011 and another array on the Resnick Engineering Hall in 2012. These projects will be evaluated over time in order to assess their effectiveness and possible expansion.

Solar array on the SUNY New Paltz Athletic and Wellness Center

The college will also continually evaluate newly emerging technologies, as well as improvements to solar technology and expand on renewable energy development whenever feasible.

Second Biomass Boiler Installation estimated CO_2 reduction: 14%

- Depending on the capacity of the initial biomass boiler and on future campus energy needs, a larger or smaller expansion of the biomass system can be considered. The current assumption is that a 300HP biomass boiler will be installed first and that consideration will be given to the installation of a second 300HP biomass boiler at this time. There will be an opportunity to increase the size of this boiler to 600HP if there is a need for more energy and if an adequate supply of fuel is available at an affordable price.

Onsite Campus Photovoltaic System estimated CO_2 reduction: 45%

- In order to achieve further CO_2 reductions the campus will consider the installation of a large scale photovoltaic system. This system will need to generate in excess of 17,000,000 kWh annually based on current data. This is a very large system due to the need to generate 80% of the campus electricity in only 1100 hours a year, the average time such a system would be operating effectively given climactic conditions in the area. In order to generate that much electricity, the college would need to allocate approximately thirty acres of space on campus to the PV system. This is based on current panel efficiency of around 11% or 245 watts per 18 square foot panel. There is little doubt that this efficiency will increase over time as there have been continuous dramatic efficiency increases in this technology for many years. In all likelihood, a far smaller area would be needed to provide this amount of electricity in the future. The college will review this option approximately every five years and reevaluate implementing this measure based on future economic and technical conditions. It is also possible that increases in electrical rates could affect the implementation of this measure.

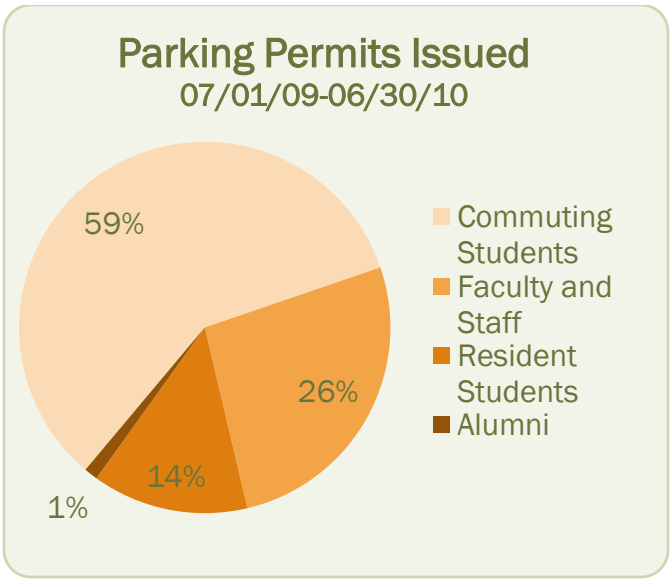
Transportation

Scope 1 and 2 energy usage is easier to measure and manage compared with Scope 3 energy emissions, those associated with institutional related travel. As with any college, employees and students burn a considerable amount of fossil fuel commuting to and from the campus. In addition, facilities operations utilize a number of vehicles for carrying out day-to-day operations and maintenance on the campus. On top of this, faculty, administrators, and staff regularly engage in business travel, further increasing the carbon footprint created by the college. In recent years, a number of measures have been undertaken to reduce ecological impacts associated with transportation. Existing programs need to be expanded and additional measures will be needed to reduce these impacts. Transportation issues are divided into three subcategories: commuting, the campus fleet, and travel.

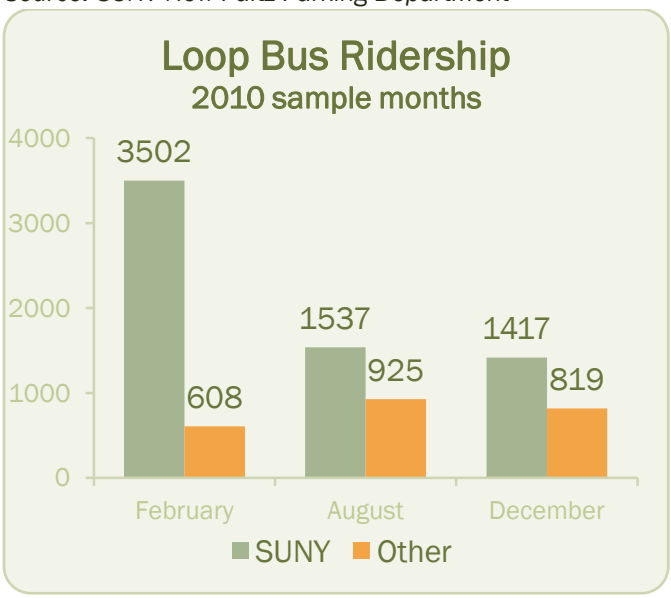
Commuting

The largest portion of the college's transportation related carbon footprint is generated by commuting. Of the college's nearly 7,885 students, 2,999 are housed on campus and the remainder commutes. Other than a small number of residence hall staff, all of the college's approximately 1,700 employees also commute to the campus. Obtaining data on this form of energy usage is very complex, and identifying measurement tools, such as tracking the number of parking permits issued annually, will be among the first goals of the college in this area. The committee is also exploring the use of employee and student zip codes to approximate commuting distances and the associated greenhouse gas emissions.

One way to reduce commuting miles is for students and employees to reside on or close to the campus. It is well known that there is a shortage of affordable quality student rental housing in New Paltz and many students are forced to seek housing in more distant surrounding areas.



Source: SUNY New Paltz Parking Department



Source: Ulster County Area Transit (UCAT)

5615 campus parking permits were issued July 2009 through June 2010. The majority (59%) of these were for commuting students; 26% are for resident students and 14% were issued to faculty and staff.

Home prices are also high in the New Paltz vicinity, forcing many employees to live outside of town and commute to work. The college has undertaken an aggressive plan to expand access to housing for students and faculty. Since 2001, two new residence halls (Lenape and Esopus) have been constructed that can house 464 students (238 and 226, respectively). An additional residence hall is being planned and there are also plans to work with the SUNY New Paltz Foundation and a private developer to construct housing immediately adjacent to campus that, when complete, is estimated to provide housing for an additional 730 people, including students, faculty, and staff. These additional housing facilities will incorporate designs to facilitate and encourage walking, biking, or the use of mass transit.

Another important transportation measure recently undertaken was the institution of a campus and town loop bus system implemented through a cooperative arrangement between the Student Association, the campus administration, the Town of New Paltz, and Ulster County Area Transit (UCAT).

Thanks to financial support from the Student Association and college, the bus is free to registered students and campus employees and available for use by the public at large for a modest fare. Ridership has fluctuated since its inception. The loop bus provides students with a convenient means to access uptown and downtown shopping areas, greatly reducing the need for private automobiles. Together with the Ulster County bus system which links to the Amtrak and Metro North rail line and a Trailways bus line that stops on campus and which has a station very nearby, students can access most commercial hubs in the surrounding counties and travel to further destinations via mass transit.

The college has also added a number of bike racks in recent years to encourage bicycle use. In addition, there is a SUNY Benefit program titled 511NY Rideshare that provides carpool matching services and some modest tax benefits for ride-sharing commuters. In January 2011, Campus Auxiliary Services (CAS) launched a shared car program through which students can conveniently rent vehicles (including hybrid vehicles) on an hourly basis for those rare instances when a car is needed. As of March, 2011 there were twenty-five registered members of the program.

Avoiding just 10 miles of driving every week would eliminate about 500 pounds of CO_2 a year.

It is hypothesized that car use can be significantly reduced by promoting these transit options and the lack of any real need for private cars for students living on campus or those in the nearby area. The college can play a role in informing commuters of alternatives to individual automobile travel. More aggressive actions and incentives are being considered to promote and increase the use of alternative transportation options.

Campus Fleet

The campus fleet consists of roughly 110 vehicles, about half of which are trucks used by facilities (pick-ups, cargo vans, etc.) and about ten percent of which are passenger cars. Other vehicles include heavy equipment like back hoes, tractors, and small carts, nine of which are electric vehicles. While some facilities functions require larger and more powerful vehicles, more of the fleet can be converted to low emission vehicles and future plans include making that transition.

New Paltz's President, Donald Christian, uses one of the college's two 2009 Nissan Altima hybrid vehicles as his official car. They are gas/electric-powered hybrids, which helps the college reduce its dependence on oil and lower the campus carbon footprint. These hybrids are part of the New Paltz fleet of nine electric cars and one electric pick-up truck (used for recycling on campus).

Travel

Faculty and staff engage in business travel for meetings and conferences associated with their work. Most academic faculty attend at least one out-of-state or country scholarly meeting per year. This results in considerable amounts of air travel, one of the most polluting forms of transportation. Business travel creates a vexing problem given that participation in professional gatherings is considered an essential aspect of academic performance. While new technologies such as webinars and listservs are providing alternative means through which faculty and professionals can engage with others in their fields without the need for travel, it is likely that this sort of professional travel will continue for some time. As technologies develop, more efforts should be made to explore and encourage these alternatives to traditional conferences and meetings.

Currently there are no systematic data collected on the amount of business travel. Reimbursed expenses associated with business travel provide some indication of its extent. In fiscal year 2009-2010, travel reimbursements totaled $303,329. Of this $109,331 was for air travel, $8,100 for train travel, $49,882 for rental cars, and $136,017, personal mileage reimbursement for private vehicle use. Distances traveled, fuel usage and greenhouse gas emissions are impossible to determine for most business travel. However, based on mileage reimbursement rates during this period, personal vehicles were used for an estimated 259,080 miles.

MOST ACADEMIC FACULTY ATTEND AT LEAST ONE OUT-OF-STATE OR COUNTRY SCHOLARLY MEETING PER YEAR. THIS RESULTS IN CONSIDERABLE AMOUNTS OF AIR TRAVEL, ONE OF THE MOST POLLUTING FORMS OF TRANSPORTATION.

Transportation Action Plan

Increase Campus Housing — estimated CO_2 reduction: to be determined

- Increase on campus and proximate to campus student housing, including the construction of a new on campus residence hall and the development of a 730 bed student/faculty housing development south of campus

Increase Bus Ridership — estimated CO_2 reduction: to be determined

- Market, promote, and incentivise loop bus ridership
- Encourage use of public transportation, e.g. Trailways, Ulster County Transit, Metro North

Increase Bicycling — estimated CO_2 reduction: to be determined

- Institute a shared bicycle program
- Install bike racks near every campus building

Increase Carpooling — estimated CO_2 reduction: to be determined

- Create a car pool incentive program

Increase Low Emissions Vehicles — estimated CO_2 reduction: to be determined

- Shift fleet to include 50% electric or low emissions vehicles
- Work with Ulster County to convert loop buses to low emissions vehicles

Explore New Technologies to Decrease Travel — estimated CO_2 reduction: to be determined

- Explore new technology and policies that make distance learning and professional development more attractive (e.g. allow use of professional development funds for purchase of laptop computers for participation in webinars in lieu of conference travel)

Improve Measurement

- Develop valid and reliable measures of commuter travel
- Develop valid and reliable measures of business travel

Energy Education

In addition to purchasing energy efficient products and equipment, there are also many ways that the college can reduce energy consumption through campaigns designed to foster behavioral change. For example, members of the campus community can be encouraged to turn off lights and computers when not in use. Students can be made aware of the significant energy used by dorm room refrigerators and can be encouraged to share or forgo the use of such appliances. Some modest measures have already been taken to educate the campus community and to encourage energy savings. For example, the campus Green Page overseen by the Recycling Coordinator provides tips for energy saving.

Energy Education Action Plan

Educational Materials

- Develop energy saving educational materials to be distributed via social media and emails to the campus community

Signage

- Post signage with energy related educational information by light switches, elevators, etc.
- Develop energy education messages to be part of computer monitor wallpaper

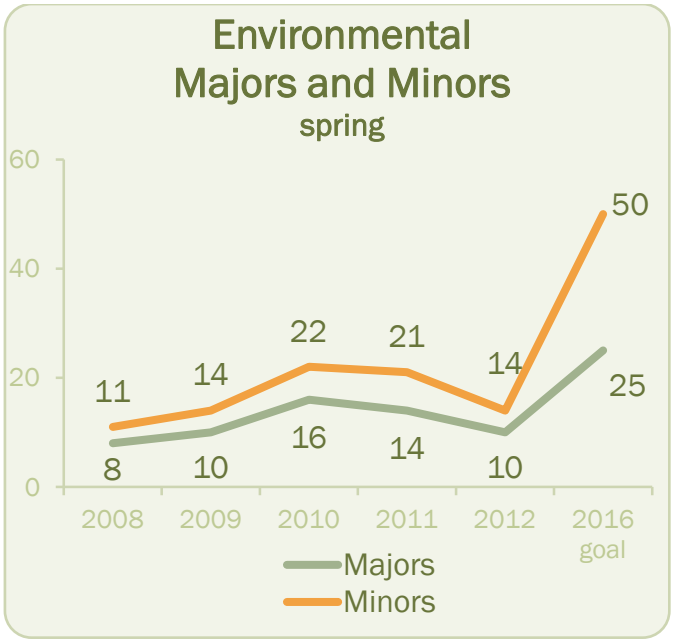
ENVIRONMENTAL EDUCATION

Achieving sustainability at the global level will require that citizens of the world understand the scope of the challenges that we face and how we can meet those challenges. In addition to instilling a basic environmental awareness among all people, this will also require that we develop the expertise necessary to understand and solve ecological problems. Thus, the college must ensure that all students achieve a basic level of ecological literacy and that we provide ample opportunity for students who wish to specialize in environmental fields. The college can also play an important role in educating the public at large. Carrying out this educational mission requires that the college employ active, engaged researchers who are seeking to understand and develop solutions to the world's environmental challenges. This section is broken down into subsections for curriculum, extracurricular programming, internal/external communications, and research.

Curriculum

The college has substantially expanded its environmental curriculum in the last ten years. In 2003, an interdisciplinary Environmental Geochemical Science major was added, followed in 2006 by an Environmental Studies minor. Given the level of interest in environmental issues among students, it is expected that increased enrollments will create the impetus for greater allocation or reallocation of resources for these programs, such as more dedicated faculty and increased operating budgets.

Internships provide students with hands-on experience working in environmentally related professions. Students in both environmental programs have some opportunities to gain internship experience. In 2010-11 approximately 25 students were engaged in such internships with 16 different firms including the NYPIRG, Prism Solar Technologies and the Mohonk Preserve.



Source: SUNY New Paltz Registrar and Career Resources offices

While the Career Resource Center maintains a database of internships, including those related to environmental positions, many are arranged independently through individual faculty members and reporting to the center by student interns is voluntary, so complete data is difficult to gather.

Students for Sustainable Agriculture work on the campus garden

In 2010-11, 48 courses focused specifically on the environment including science courses such as Ecology and Natural Resources and Energy and social science courses such as Gender and the Environment and the Politics of Environment and Development. In addition, many courses in some way incorporate environmental themes. For example, in recent years some English and art classes have used the environment and sustainability as themes for creative expression. In the School of Business, several classes incorporate environmentally related issues such as environmental accounting and business ethics as they relate to sustainability. There are no systematic data available on how widespread this is, but such courses help to facilitate ecological sensibilities from a range of disciplinary perspectives.

The college also makes use of on and off campus environmental resources to enhance curricular programs. For example, the Brook Farm is a local, organic farm which offers educational programming for SUNY classes. Since 2006, over 100 classes have visited the Brook Farm ranging from art and sociology to biology and English as a second language. In 2010, there were nineteen such class visits. If farm programming becomes more formally integrated into curriculum, more stable funding sources may be identified.

In addition to the Brook Farm, a second educational opportunity associated with food and agriculture is provided by a campus garden currently operated by the student group, Students for Sustainable Agriculture. Several faculty have expressed an interest in utilizing the campus garden for educational purposes. Potentially, if its use increases and it is more fully integrated into curriculum, it is possible it might be more centrally relocated and expanded. Additionally, some of the produce could be incorporated into campus dining or sold at the farmers market.

THE COLLEGE MUST ENSURE THAT ALL STUDENTS ACHIEVE A BASIC LEVEL OF ECOLOGICAL LITERACY AND THAT WE PROVIDE AMPLE OPPORTUNITY FOR STUDENTS WHO WISH TO SPECIALIZE IN ENVIRONMENTAL FIELDS.

Curriculum Action Plan

Increase Majors and Minors

- Recruit 50 Environmental Studies minors
- Recruit 25 Environmental-Geochemical Science majors
- Develop and implement an Environmental Studies major

Support Curriculum

- Provide release time or compensation for an Environmental Science/Studies coordinator
- Provide staffing for an Environmental Science/Studies office
- When curriculum development warrants, create a funded position for the Brook Farm Project liaison and associated support
- Create coursework to maximize educational value and productivity of the campus garden

Increase Coursework

- Develop and implement sustainability certificate programs (e.g. renewable energy, environmental education)
- Develop course and hire faculty to teach Introduction to Environmental Studies
- Incorporate sustainability themes into 50 courses per year

Increase Internships

- Develop coordinated pool of at least 20 environmental internships per semester

Other

- Development and implementation of sustainability learning assessment tool
- Consider a sustainability "living-learning community" in residence halls.

Programming

The college offers a great deal of programming on a wide range of topics, including environmental issues. Some of this programming is offered through academic departments, but most is done by other campus organizations. Most environmental programming is carried out by student organizations or the Environmental Task Force, an informal sustainability group that preceded the creation of the official Sustainability Committee. The School of Science and Engineering also runs a colloquium series that includes speakers who occasionally focus on environmental topics. The Center for Research, Regional Education and Outreach (CRREO) has published papers and held conferences on water resources and land use issues. The college has a number of vibrant student organizations with the environment as their focus, including the New York Public Interest Group (NYPIRG), Students for Sustainable Agriculture, the Solar Car Racing Team and the Recycling Club. During the 2010-11 academic year there were roughly 25 environmentally related educational events held on campus, primarily lectures and film screenings, but also including things such as a craft fair at which crafts made of recycled materials were sold, and participation in an international day of education and political action around the issue of climate change.

Another important educational program is *RecycleMania*, a national competition affiliated with the US Environmental Protection Agency in which campuses compete to improve recycling and waste reduction. SUNY New Paltz has participated in *RecycleMania* since 2009, and in addition to raising awareness about resource use and waste, it has served to strengthen the recycling system at the college. This is a very effective program and similar events should be considered for other areas, such as energy use reduction. *RecycleMania* is overseen by the Facilities Operations Department. Education and outreach activities associated with the program are primarily carried out by the campus recycling coordinator, a paid student position created in 2006.

Founded in 2007, the New Paltz Solar Car Team is sponsored by the SUNY New Paltz Student Association, the School of Science & Engineering, and The Solar Energy Consortium. Students are responsible for securing funds, raising renewable energy awareness, and researching and developing solar-powered electric vehicles targeted for competition at the American Solar Challenge, Formula Sun Grand Prix, and World Solar Challenge races.

It is expected that the Sustainability Committee, charged with drafting this report, will also engage in educational programming. The committee currently exists as a subcommittee of the Budget, Goals, and Plans Committee of the faculty governance structure. The college is now in the process of hiring a full-time sustainability coordinator who will play a vital role in leading campus environmental efforts. Campus sustainability efforts should be well integrated into the educational program at the college and the committee should be designed to ensure effective collaboration between all of the relevant units.

Programming Action Plan

Increase Staffing

- Hire a full-time Sustainability Coordinator

Support Events and Programming

- Offer a minimum of fifteen environmental education events per semester
- Continue and encourage participation in *RecycleMania*
- Develop a residence hall energy savings competition

Support and Expand Campus Garden

- Expand campus garden and explore ways to incorporate campus grown food into campus food service
- Create a direct link between curriculum and the campus garden to enhance its uses

Evaluate Sustainability Committee

- Review current structure of the campus Sustainability Commitee to ensure maximum effectiveness

Communications

The college has a communications office that regularly issues news releases about the college, publishes the bi-weekly campus electronic newsletter, News Pulse, and otherwise manages communications with the public. In recent years, a number of news releases and articles have

focused on environmental achievements on campus, including developments in solar energy research, energy saving features incorporated into buildings, and recognition that the college has received from external organizations for environmental achievements. The college regularly features environmentally related news and events on the main page of the college web site. At times these developments have also received coverage in the local media.

Organizations sponsoring on-campus environmental events often have them listed in local media outlets and on various listservs in addition to the college's own web site. At some events, members of the public make up a large portion of the audience. The college also maintains a "New Paltz Is Green" web site that describes environmental practices on campus and provides links to various environmental resources.

The college saves 180,000 gallons of water a year with installation of toilet fixtures.

Communications Action Plan

Increase Media Coverage

- Increase campus media coverage of environmental events and developments
- Institutionalize regular environmental column in campus paper, The Oracle, and other student run media

Develop Branding and Environmental Identity

- Create "Green New Paltz" logo to reinforce our environmental commitment and identity

Inform Public about Campus Energy Use

- Publicly post energy use online once sub-metering system is established

Research

All faculty at the college are engaged scholars actively conducting research in their respective disciplines. A number of faculty conduct research in environmentally related areas. In some cases students are also engaged in such research activities either as research assistants working on faculty directed projects or as part of their class work or independent study projects. On occasion faculty and staff also secure grants to fund environmentally related research. In recent years, faculty have received external funding to study such topics as renewable energy, water resources and sustainable agriculture. The Office of Sponsored Programs provides support for faculty by identifying relevant funding opportunities and aiding in proposal development. However, faculty research is primarily driven by the independent research agendas of individual faculty members and that is directly tied to the areas in which they were hired to teach. As more faculty are hired to serve in environmental education roles, we are likely to see more self-assembly of faculty into cross-disciplinary research groups and overall, more environmentally related research undertaken at the college.

Research Action Plan

Increase Research and Funding

- Identify ways to encourage environmentally related research
- Increase applications for external funding for environmentally related faculty research

LAND USE

In 2007 a Master Plan Task Force was appointed and charged with considering the long-term needs and physical growth of the campus. A report has now been developed and ample attention has been paid to practical needs, aesthetic qualities and environmental concerns. Plans to protect ecologically sensitive areas of the campus, to make better use of the natural features of the land, and to expand green space and eliminate impermeable surfaces where possible are included in this report. Bioswales will be used to mitigate environmental damage from surface water runoff. Indigenous plants will also be used in new landscaping. Synthetic pesticides and fertilizers are not utilized in landscape management except on the athletic fields.

Gunk riparian and wet meadow expansion depictions, Facilities Master Plan, page 13

"In order to be practical and conservative with the college's physical resources, wherever possible the plan recommends rearranging uses within existing buildings in lieu of demolition and new building … For those new buildings which are proposed, the plan calls for them to be flagship examples of sustainability, with LEED Silver performance or better, and visible examples of sustainability, such as green roofs and glazing for passive solar energy. This is not only the most environmentally responsible path for the college to take as a signatory to the American College and University Presidents' Climate Commitment (ACUPCC), it will also result in substantially lower operating costs in the future.." (Facilities Master Plan, page 7)

LAND USE ACTION PLAN

Inventory Land Use

- Inventory and map green and open space
- Inventory and map impermeable surfaces
- Inventory and map trees on campus and develop comprehensive tree policy

Decrease Synthetic Pesticide Use

- Continue policy to not utilize chemical pesticides on non-athletic grasses
- Investigate alternatives to synthetic chemical use on athletic fields

Implement Green Infrastructure Components of Campus Master Plan

- Implement initiatives specified in campus master plan (e.g., permeable sufaces, bioswales to mitigate stormwater run off)

SOLID WASTE AND PURCHASING

Like all institutions, colleges consume resources and generate waste. Colleges must purchase everything from office and lab equipment to paper and food. Waste comes in the form of everything from construction debris to used electronics to food scraps. All manufactured material goods require the use of natural resources. All materials that we use leave residual waste that must be disposed of, representing additional infringements on natural ecosystems. But these impacts

can be limited through effective purchasing and waste disposal policies. The following section is divided into solid waste disposal, purchasing policies and food.

Solid Waste

The college has taken a number of measures to reduce solid waste. Several recycling programs have been created and expanded in the last five years. This includes glass/metal/plastic beverage container recycling. While this recycling program was started over a decade ago, a 2005 Study showed that it was not functioning well due to a combination of factors including inadequate receptacles, lack of training among custodians, and a lack of awareness and a general skepticism among many in the campus community about whether goods were actually being recycled. Since that time, the number of recycling receptacles has been increased dramatically and the college has undertaken extensive educational efforts, including participation in the *RecycleMania* competition and the hiring of a part-time student recycling coordinator. As a result of these measures recycling rates have improved dramatically.

Solid Waste Recycling and Disposal (tons)

Materials	2009	2010	2011	09-11 Change
Comingled Recyclables	38.13	28.45	28.60	-9.53
Corrugated Cardboard	38.37	62.81	37.52	-0.85
Mixed Paper	145.33	51.00	48.37	-96.96
Electronics	14.72	11.62	16.62	+1.9
Food Waste Composted	54.52	123.17	111.88	+57.36
Total Recycled	3,851.45	1,393.89	6,384.83	+2,533.38
Total Landfill	730.00	859.55	735.89	+5.89

Source: SUNY New Paltz Facilities Operations. Only select materials are presented here. Other materials such as yard waste, construction debris, batteries, etc. are not shown here, but are included in the totals. Some materials (such as construction debris) vary dramatically from year to year depending on campus infrastructure projects.

Programs designed to capture other solid waste have also been initiated in recent years. Since 2009 the college has had an electronics recycling program in which students can dispose of electronic equipment at various locations in the residence halls. The college has also expanded construction debris recycling.

In 2008, the Environmental Task Force initiated the Reuse 2 Reduce resource recovery program in which food, clothing and furniture previously disposed of by students leaving the residence halls at the end of the year are recovered and donated to local charities. The sheer volume of discarded items during this time of year overwhelms existing recycling facilities in the residence halls. This program is now run by the Recycling Club and is overseen by the recycling coordinator. Tons of materials have been kept from landfills

and put to good use through this program. In 2009, clothing recycling bins operated by Planet Aid were installed in several locations on campus near residence halls, providing a year-round opportunity to recover used items. In 2010, 5.6 tons of clothing was collected through this program.

SUNY New Paltz Farmers Market

Facilities operations also composts landscaping waste on campus including tree branches, weeds, and leaves. A food scrap composting operation was also initiated at Hasbrouck Dining Hall, the main dining facility, in 2009. Kitchen scraps and those remaining on plates collected by Hasbrouck employees are composted by Greenway, a composting firm located in Poughkeepsie. An initiative with the Town of New Paltz was recently undertaken allowing campus food waste to be composted at a nearby facility. The food service provider is in the process of expanding food scrap composting to other dining facilities on campus. This will be a challenge because, in contrast to Hasbrouck where trained employees collect food waste, in other facilities individual consumers would have to separate food waste from other materials. Efforts and signage have been expanded to educate consumers about composting and to make proper composting procedures clearer.

In addition to recycling, the college has also initiated solid waste reduction measures. The generation of food waste was reduced when, in 2010, Hasbrouck converted to a "trayless" system, thus discouraging students from taking more food than they would consume. The college also has a policy in place designed to reduce paper waste. Students are granted a print quota in the campus computer labs to prevent excessive paper use. An upgraded print quota system designed by Paper Cut and instituted in 2011 includes information of the environmental impacts of paper use and encourages conservation.

Purchasing

Several policies are in place to ensure that needed items purchased by the college meet environmental criteria. Cleaning products used by the custodial staff meet NYS required green cleaning requirements. Computers and other equipment purchased must meet Energy Star standards. The paper purchased through Central Stores is required to contain 100% post-consumer waste recycled content and be manufactured in a chlorine-free process.

SUNY New Paltz custodial staff uses Green Seal and biodegradable cleaning products in all buildings.

The college has an on-campus student population of almost 3000, plus thousands more students, faculty, and staff who regularly purchase food on campus. Awareness about the ecological impact of food production and distribution has risen dramatically in recent years. More and more people are seeking locally grown and organic foods not only for their health benefits, but also in order to reduce the ecological impact of their food consumption. Many faculty and staff have been working with Campus Auxiliary Services to bring more sustainably produced food to campus, and the Students for Sustainable Agriculture have also mobilized student support for this effort. As a result, some gains have been made in terms of securing more local and sustainably produced foods.

Recommendations and goals for increasing the availability of these products will be incorporated in future food service provider contracts to ensure steady progress in this area.

Local food is available on campus in a limited way through a weekly campus farmers market that is held during the warm spring and fall months. The market, started in the spring 2009, provides access to locally produced ready-to-eat foods, as well as fresh produce. It helps to establish good relations with area farmers and local businesses while educating students about the benefits of local food.

Solid Waste and Purchasing Action Plan

Increase Composting and Recycling

- Expand food composting to all dining facilities
- Improve managment of campus landscaping waste composting
- Implement additional improvements in recycling systems in classroom buildings

Increase Sustainable Food

- Have sustainable food recommendations and goals written into the next food service

Support and Expand Farmers Markets

- Consider expanding the farmers market to include an indoor winter market

Other

- Seek other areas of purchasing for improvement

CONCLUSION

SUNY New Paltz has made considerable strides towards improving ecological performance and expanding environmental education in the last decade. We have a long way to go in order to achieve full sustainability. This plan documents past achievements and identifies targets for the future. This Campus Sustainability Plan will be regularly revisited; revised and updated every two years as we progress towards our goals. While the specifics may evolve, the college's firm commitment to making this institution a model of sustainability and a center of environmental learning will not cease.

Sustainability Committee Members

Current

Alex Bartholomew, Budget, Goals and Plans 2012-
Jacqueline DiStefano, VP Admin & Finance 2010-
Pom Jiraporn, Business 2012-
Michael Malloy, Environmental Health & Safety 2010-
Lauren Marcus, Library 2012-
Brian Obach, Liberal Arts & Sciences 2010- (Chair 2010-2012)
Jill Parisi-Phillips, Fine and Performing Arts 2012-
Brian Pine, Campus Sustainability Officer 2010-
David Richardson, Science & Engineering 2011-
Zachary Rousseaus, SA 2012-
John Shupe, Facilities Management 2010-
Jane Sileo, Education 2010-
KT Tobin, Professional 2010- (Chair 2012-2013)
Shane Triano, SA 2012-

Past

Julie Chiarito, Budget, Goals & Plans 2011-2012
Dawn Marie Allan, SA 2011-12
Lauren Brois, SA 2010-11
Megan Coder, Library 2010-12
Kelly Drummond, SA 2011-12
Stanley Hayes, Budget Goals & Plans 2010-11
Meghan Paula Kilfeather, RHSA 2010-12
Al Konigsberg, Science & Engineering 2010-11
Max Lasky SA 2010-11
Tim Redfearn, RHSA 2010-12
Carol Rietsma, Science & Engineering 2010-2011
Sally Schultz, Business 2010-11
Tullin Sener, Business 2011-12
Alice Wexler, Fine and Performing Arts 2010-12

REFERENCES

American College and University Presidents' Climate Commitment (ACUPCC)
2009 Energy Use Profile Report
2010 SUNY New Paltz Master Facilities Plan
2007 SUNY New Paltz Landscaping Plan