

**FOR POSTING DRAFT: PUBLIC EDUCATION  
(4/17/08)**

## **4.6 Our Environment**

**Major Finding: UNC should assume a leadership role in addressing the state's energy and environmental challenges.**

**4.6.1 UNC should embrace environmental sustainability as a core value among its institutions.**

### Existing Program

1. Sustainability Office—Leadership and Partnership. Environmental sustainability has become an integral part of the institutional and academic culture at Carolina. In 2001 we were the first campus in the state to hire a full-time Sustainability Coordinator, and in 2003 we hired an Energy Conservation Manager in the early nineties. Chancellor Moeser is a charter signatory of the American College and University President's Climate Commitment, pledging Carolina to carbon neutrality by mid century. In January we hired one of the first greenhouse gas emissions specialists in the country. Since 2003, water consumption per square foot has fallen by 15% and energy consumption by 8%. Recycling programs on campus achieve a 43% diversion rate and Carolina is a national leader in construction and demolition waste recycling. The high performance building program launched by the Sustainability Office now includes 15 LEED Accredited Professionals, a full time commissioning coordinator, and a standard protocol for energy modeling. Carolina constructed the first LEED certified building in the system, and five LEED buildings are in the design and construction pipeline, including three that aspire to achieve the LEED platinum level of certification. Innovative stormwater management is now a hallmark of the Carolina campus. Each of these programs will support even more ambitious sustainability goals for the new Carolina North campus.

The sustainability website, calendar, listserv, and biennial campus sustainability report already reach thousands of students and decision makers across the state. Carolina is in a strong position to offer expanded leadership and advice for other system campuses seeking to institutionalize sustainability.

**4.6.2 UNC should leverage its existing research expertise to address critical environmental and energy issues.**

### Existing Programs

2. The UNC Institute for the Environment (IE) advances interdisciplinary research that addresses fundamental questions about the environment to solve local to global challenges, educate practitioners, and inform people about critical issues. Using innovative approaches, IE focuses on critical environmental issues to enable sustainable human communities and their coexistence with natural systems. Faculty research is focused on practical concerns in NC, such as river restoration, floodplain management, drought vulnerability, public policy options for water allocation, coastal susceptibility to sea level rise, air quality models to assist municipalities, and energy policy. The Environmental Resource Program (ERP), IE's outreach and public service program, leads research-driven outreach and service activities, including facilitation of community dialog on critical environmental issues and provision of related technical assistance to NC communities. The ERP has trained thousands of K-12 teachers in environmental and earth systems science, and has conducted environmental workshops for local governments, community groups and other North Carolinians. In addition, IE is already preparing the next generation of environmental leaders to incorporate sustainability into their actions and decisions through its Sustainability Minor, including two core courses—*Principles of Sustainability* and *Systems Analysis for Sustainability*. These courses provide a base from which additional community level education could be developed. IE's three North Carolina field sites—in Highlands, Manteo and Morehead City—provide convenient locations for such programs.

#### New programs

3. UNC Council for a Sustainable Environment. The UNC Tomorrow Commission recommended several strategies aimed at producing much greater system-wide coordination and collaboration on environmental issues. We agree and encourage the creation of a UNC Council for a Sustainable Environment that would convene faculty and environmental professionals from across the university system to share information, identify areas for research, design innovative engagement strategies, and form multi-campus collaborations to help North Carolina respond to pressing environmental challenges. This is roughly the equivalent of a scholars council that focuses exclusively on environmental issues, but with engagement and professional staff, who will implement some of the recommended activities as participating members. Through sharing information about existing and planned activities, the Council will encourage campuses to build on existing strengths and partner on “big” ideas that will make a major difference. It also could identify the funding necessary to support environmental research and engagement. The first step will be to convene a small planning group from across the UNC system to develop clear goals for the Council and to establish a governance structure. Carolina is prepared to host the first planning meeting of the Council, but this is a system-wide convening and coordinating function that is best filled by someone from General Administration.

*Implementation:* The person responsible for convening the first meeting should be identified by President Erskine Bowles. The Institute for the Environment at Carolina will work closely with the President's designee to assist in the planning and development of the Council.

4. Sustainable Development for North Carolina—Creating New Knowledge, New Partnerships, and Connecting to Practice on Water and Energy Issues. Faculty members at Carolina are committed to working closely with North Carolina policymakers and practitioners to address policies and practices needed to promote sustainable community development, especially to insure the availability of clean water and sustainable energy sources. Because of the pressing need for a new energy paradigm in North Carolina and the nation, it is important that the UNC system campuses work together to identify existing expertise and opportunities for collaboration. Carolina faculty members lead the state and the nation in research on sustainable community development and water quality and quantity, and they are poised to meet policymakers' needs with meaningful research translated in usable forms. Carolina also has demonstrated a growing expertise on energy policy issues, and in partnership with other leading campuses—such as NCSU, Appalachian State University and others—we can similarly assist policymakers. Now is the time to rally the collective expertise of the campuses by expanding support for scientific research and meaningful application of the results. There also needs to be a strategy for engaging Carolina's talented graduate students with these environmental problems. For our efforts to succeed, particularly in the area of energy, there must be an effective way of creating partnerships among faculty members from the different UNC campuses.

The Environmental Resource Program (ERP) within the Institute for the Environment is committed to serving as the hub for facilitating collaboration among faculty at Carolina and across the UNC System with expertise in water and energy issues. Promoting sustainable community development, with a special emphasis on water and energy, will be its highest priority for the foreseeable future. ERP will work closely with policymakers to identify their most pressing needs for research and decision tools, and it will respond to those needs by working closely with faculty to form research teams and identify necessary funding. It will serve as a neutral broker for bringing the expertise of the campus together with the needs of the state—it also will work to break down barriers that prevent collaboration among faculty from the different campuses. ERP also will work closely with the Renaissance Computing Institute (RENCI) and its connection with Carolina, NCSU, ECU, UNC-Charlotte, and UNC-Asheville to develop scenario and computer visualization tools that will assist state and local policymakers with actual decisions. Finally, it will connect campus knowledge through education and outreach that targets students at all levels, government decision-makers, and community and business leaders. Carolina is a wonderfully decentralized university, and ERP will provide a neutral mechanism for combining our individual strengths into an even stronger force to insure availability of clean water and sustainable energy sources.

*Implementation:* The person responsible for facilitating faculty collaboration at Carolina in the development and implementation of a strategic plan to address water and energy challenges facing North Carolina is Kathleen Gray, Director of the ERP. The plan will identify possible research priorities and collaborations, decision tools, and opportunities for public education. Faculty from other UNC campuses should be involved in developing the plan to the greatest extent possible. The plan will be developed by Carolina environmental faculty with the facilitation of Kathleen Gray by January 2009.

The following metrics will be used to assess whether we are making progress: realistic strategic plan developed collaboratively; number of decision tools identified and then developed, plus measures of their effectiveness in informing decision making; number of new collaborative grants submitted and funded in the priority areas; public education conducted and materials developed plus measures of effectiveness of educational activities and materials.

#### **4.6.3 UNC should increase community awareness of environmental and sustainability issues.**

##### Existing Program

5. Community Carbon Reduction: Educating Local Residents on Reducing Carbon Dioxide Emissions. In 2005, UNC and the Town of Chapel Hill became the first town-gown partnership in the US to commit to a 60% reduction in carbon dioxide emissions by 2050. IE faculty and students and the Sustainability Office were instrumental in securing those pledges and are assisting both entities in identifying emissions baselines. In addition, the ERP is partnering with the Town of Chapel Hill and local business and civic leaders to develop educational materials and evaluation metrics that will help the Town meet its pledge.

##### New programs

6. Carolina's Campus—A Living Laboratory for Environmental Sustainability. Carolina must do more than create a sustainable campus—it must communicate the results of its sustainable infrastructure initiatives to campus members and visitors—both real and virtual. The Sustainability Office has done an excellent job of moving the campus community to greater sustainability. A critical next step is to make the campus infrastructure visible and understandable to campus visitors. Much of this infrastructure—such a storm water retention and infiltration practices; technologies to heat, cool, ventilate, control and light buildings; and stream restoration efforts—normally is designed to be embedded in the landscape or in buildings in ways that most people never notice. Environmental education needs to be designed into, and added onto, campus infrastructure projects so that target audiences can learn about and appreciate the sustainability decisions the campus has made. Carolina will develop signage, websites, GIS maps, and other innovative strategies so that visitors can tour the campus and learn how sustainable development projects look and work. The idea is to turn sustainability investments into educational assets. Carolina's campus is known widely for its beauty and charm, and implementing state-of-the art sustainability practices at the nation's oldest public university is a powerful educational message. We are committed to sharing that message to a wide range of audiences.

This initiative by Carolina will integrate research and education to the greatest extent possible. Faculty researchers from Environmental Sciences and Engineering are seeking outside funding for a One Hydrosphere program to demonstrate innovative approaches to managing, treating and distributing potable, storm and wastewater at the new Carolina North

campus. Over time, this facility could become an onsite extension training and service center for water managers across the state. Another example is a new photovoltaic system to convert sunlight into electricity that was developed by physics professors at Carolina and that will be demonstrated and tested in a 1 MW solar array at Carolina North.

*Implementation:* The person who will lead this ongoing effort is Cynthia Shea, Director of the Sustainability Office at Carolina. A comprehensive plan for increasing community awareness of environmental and sustainability issues will be developed by January 2009. Shea will work in close partnership with Kathleen Gray, Director of the Environmental Resource Program, Todd Boyette, Director of the Morehead Planetarium and Science Center, Kelley O'Brien, Director of the NC Civic Education Consortium, Peter White, Director of the NC Botanical Garden, and any others with interest and expertise.

To expand the Sustainability Office's capacity to respond to inquiries from across the system, assess the effectiveness of sustainability strategies adopted across campus and elsewhere in the system, and make that information available to a broader public will require the addition of one new program manager at a cost of \$80,000 including benefits. Shea also will be co-chairing a Sustainability Taskforce set up by UNC General Administration.