**A note to CEST working group reviewers: please review the text to ensure your working group discussions are reflected in this document. Final layout will occur when text and document flow/organization is finalized. The Climate Action plan and tactics will be folded into this document at a later date. Send feedback to** [**tracy\_dixon@ncsu.edu**](mailto:tracy_dixon@ncsu.edu) **by March 3, 2010.**

**Key to color coding:**

**Notes in green: comments from CEST 2/10/10 meeting for incorporation by plan drafters**

**Items in red: indicate information is not yet complete**

**Advancing Sustainability at North Carolina State University: A Five-Year Strategic Plan**

**2010-2015**

**Submitted to the North Carolina State University Board of Trustees by:**

Jack Colby, Co-Sustainability Officer, Assistant Vice Chancellor for Facilities Operations

Bill Winner, Co-Sustainability Officer, Professor, Dept. of Forestry and Environmental Resources, Coordinator for Environmental Science & Natural Resource Programs, and Coordinator of the University Energy Council

**Document coordinated by:**   
Campus Environmental Sustainability Team

University Sustainability Office

Contents add page #,

Contributors and Participants

Executive Summary

1. Introduction
   1. Sustainability in Academic Institutions
   2. The Case for Sustainability at NC State
   3. Strategic Planning Process
   4. Next Steps and Monitoring Progress
2. Strategies
   1. Strategic Integration
   2. Academics
   3. Research
   4. Buildings
   5. Dining
   6. Energy and Water
   7. Land Use
   8. Materials and Purchasing
   9. Transportation
   10. Waste Reduction and Recycling
   11. Campus Education and Outreach

Appendices

1. Sustainability Laws and Commitments Applicable to NC State

**Overall notes:**

Make sure to make accountability and measurement more visible in front of document

Flow is somewhat awkward

One vision for entire plan

Consider section about baseline information/where we are now/what information we need to help with tracking

**Campus Environmental Sustainability Team**

Thank you to the members of the Campus Environmental Sustainability Team for guiding this strategic planning process and engaging campus in an open and participatory process.

Carole Acquesta, Director, Capital Project Management

Jack Colby, Co-Sustainability Officer and Assistant Vice Chancellor for Facility Operations

Emily Dell, Research Technician, Soil Science

Tracy Dixon, Director, University Sustainability Office University Sustainability Office

Barbara Doll, Water Quality Specialist, NC Sea Grant Program

Wade Fulghum, Economic Development Program Manager, NC Solar Center

Michael Harwood, Associate Vice Chancellor, Centennial Campus Development

Tim Hatcher, Associate Professor & Coordinator, Educational Leadership & Policy Studies

Natasha Herting , 2008-09 Chair, Student Government Sustainability Commission

Lisa Johnson, University Architect, University Architect’s Office

Paul McConocha, Energy & Water Program Manager , Energy Management Office

Barry Olson, Associate Director, University Housing

Brian O'Sullivan ,Assistant Director for Planning & Transit Operations, Transportation Office

Matt Peterson, Chair, Inter-Residence Council

Nessa Stone, Operations Manager, Waste Reduction & Recycling

Zach Tolbert, 2010 Co-Chair, Sustainability Commission of Student Government

Bill Winner, Co-Sustainability Officer, Coordinator of Environmental Science & Natural Resources Programs & Professor, Department of Forestry & Environmental Resources

Blain Woods, Assistant Director, Purchasing Department

**Contributors and Participants**

Double check with chairs and send email courtesy to all

Thank you to the 20 students, 33 faculty members members, 71 staff members, and four community partners that helped make this planning process a success. The individuals represent over 76 campus and community departments and units participating in the process. Individuals participated by commenting on a select piece of the plan or the entire plan. In addition, the Sustainability Strategic Plan is endorsed by x [major campus entities] as a plan that will move NC State to the next level of sustainability.

Special thanks to the chairs of the CEST working groups who spent countless hours ensuring everyone’s voice was heard and creating the strategies that will move campus toward sustainability. Below are the campus and community members who contribute to the strategic planning process.

**Carole Acquesta, Capital Projects Management**

Joanie Aitken, University Payroll

Kris Bass, Biological & Agricultural Engineering

Lindsay Batchelor, University Sustainability Office

Bill Beardall, Grounds, Motor Fleet, and Waste Reduction & Recycling

Todd Becker, Environmental Health and Safety

Lindsay Batchelor, University Sustainability Office

Scott Beck, Natural Resources Policy and Administration

Georgia Bizios, College of Design

Kofi Boone, Landscape Architecture

Robert Borden, Civil, Construction and Environmental Engineering

Tuere Bowles, Educational Leadership & Policy Studies

Allen Boyette, Building Maintenance and Operations

Brooke Boyle, Transportation Office

Ronald Bradley, Office of Information Technology

Ray Brincefield, Athletics

Dominic Brown, Chemical Engineering   
Ellen Buckner, Environmental Health and Safety

Frank Buckless, Accounting

Kimberly Conley, Industrial Extension Service

Megan Cain, Environmental Technology & Waste Reduction and Recycling

Alison Carpenter, Transportation Office

**Jack Colby, Facilities Operations**

Kevin Cummings, Repair and Renovation

Danesha Seth Carley, Crop Science and Center for Integrated Pest Management

Al Chen, Accounting

Bill Davis, Office of Energy Management

David Dean, University Sustainability Office

Emily Dell, Soil Science and Staff Senate

Francis De Los Reyes, Civil, Construction and Environmental Engineering   
David Dean, University Sustainability Office

Kathy DeBusk, Biological and Agricultural Engineering

Kelley Dennings, NC Division of Pollution Prevention

Environmental Assistance

Joe DeCarolis, Civil, Construction and Environmental Engineering

Dave DeMaster, Marine Earth and Atmospheric Sciences  
Tracy Dixon, University Sustainability Office

Barbara Doll, NC Sea Grant

Corinne Dumonceau, Civil Engineering

Lisa Eberhart, University Dining

Pete Evans, College of Physical & Mathematical Sciences

Rob Farrell, NCSU Libraries

Bob Ferrell, Repair and Renovation

Kevin Fisher, Sunoco Recycling

Chris Frey, Civil, Construction & Environmental Engineering

Ariel Fugate, Fisheries and Wildlife & Waste Reduction and Recycling

Analis Fulghum, Waste Reduction and Recycling

Wade Fulghum, NC Solar Center

Alan Galloway, Office of Information Technology

Noah Genzel, Office of Information Technology

Joshua Gira, College of Natural Resources

Jenny Grant, RBC Bank

Todd Gunderson, Office of Information Technology  
Erik Hall, Utilities & Engineering Services

Michael Harwood, Centennial Campus Development

Tim Hatcher, Educational Leadership & Policy Studies and Faculty Senate

Jesse Henderson, Forestry and Environmental Resources

Rich Henderson, Audubon Environmental, Inc.

Natasha Herting , Industrial Engineering

Taylor Hescock, Environmental Technology

Raji Hewavita, Environmental Technology   
Jeff Hightower, Utility Infrastructure Planning

David Hinks, Textile Engineering Chemistry and Science

Darius Hinton, Agriculture Business Management

Kelly Hook , Political Science

Sam Hudson, Textile Engineering Chemistry and Science

Joe Huegy, Institute for Transportation Research and Education

Scott Jennings, Fleet Services

James Jeuck, Forestry Extension

**Lisa Johnson, Office of the University Architect**

Tom Jones, Facilities Operations Business Services

Barry Joyce, Athletics

Tom Karches, Office of Information Technology

Kathy Kelly, Crop Science

Sarah Ketchem, Waste Reduction and Recycling

Saad Khan, Chemical and Biological Engineering

Bill Kinsella, Department of Communications

Sarah Kirby, 4-H Youth Development & Family & Consumer Sciences

Emma Klaus, Chemical Engineering

Randy Lait, University Dining

Yu-Fei Leung, Parks, Recreation & Tourism Management

Kenneth Lill, Jr. , Mechanical Engineering

George List, Civil, Construction, & Environmental Engineering

Sharon Loosman, Purchasing Department

Brian Matthews, College of Education

Lisa Maune, Design and Construction Services

**Paul McConocha, Office of Energy Management**

Katie Mcknight, Environmental Technology

Rachel Miller, Capital Projects Management

Daniel Minkler, Chemical Engineering

Tom Moore, Repair and Renovation

Sonum Nerurkar, Environmental Technology

Barry Olson, University Housing

Joe O'Neil, NC Solar Center

**Brian O’Sullivan, Transportation Office**

Brian Parham, WESA and Biological Sciences   
Charlie Parrish, Industrial Extension Service

Matt Peterson, Environmental Science & Inter-Residence Council

Ewan Pritchard, Advanced Transportation Energy Center  
Maureen Quinlan, NC Solar Center

Randy Reed, University Housekeeping

Luis Rivera, Business Administration

Ed Rogers, Office of Information Technology

Joe Roise, Forestry and Environmental Resources

John Royal, College of Engineering

Tom Rufty, Crop Science

Ken Satterwhite, College of Veterinary Medicine

Albert Scott, University Housekeeping

Chadwick Seagraves, NCSU Libraries   
Edward Sekmistrz , Office of Energy Management

Joseph Sevits, NCSU Libraries

Rhonda Sherman, Biological and Agricultural Engineering Extension

Tom Skolnicki, Office of the University Architect

George Smith, Jr. , Building Maintenance & Operations

Aubrey Southwell, Waste Reduction and Recycling

Jean Spooner, Biological & Agricultural Engineering

Dona Stankus, NC Solar Center

John Stone, Civil, Construction, & Environmental Engineering

**Nessa Stone, Waste Reduction and Recycling**

Mande Swisher, University Sustainability Office

Laura Taylor, Agricultural and Resource Economics

Zach Tolbert, Political Science & Student Government Sustainability Commission

David Townsend, Grounds Management   
Brandon Vann, Office of Energy Management

Tom Wentworth, Plant Biology

Cody Williams, , Alumni Relations

Gabrielle Willis, University Dining

**Bill Winner, Provost Office & College of Natural Resources**  
Patti Woodbury, Wood and Paper Science

**Blain Woods, Purchasing Department**

Jimmy Wright, Repair and Renovation

Maurice York, NCSU Libraries

**\*bold designates a working group chair**

# Executive Summary

Academic institutions across the country are seeking to advance sustainability. Colleges and universities are a logical fit for becoming models of sustainability because they demonstrate the capacity for institutional change in society while educating and creating the leaders of tomorrow. Additionally, national, state, and university laws and policies are holding universities to a new standard of sustainability. North Carolina State University has committed to advancing sustainability as a core business value as a way to make progress towards its mission. Given that sustainability, energy, and the environment are intuitional priorities, the Campus Environmental Sustainability Team (CEST) was charged to further institutionalize sustainability into all aspects of the university mission and create a unified sustainability program.

Sustainability is part of NC State’s land-grant mission and some progress has been made. The campus is now ready and positioned to take sustainability to the next level. Toward the end goal of achieving an environmentally, socially, and economically sustainable university, NC State will have achieved the next level of sustainability when the campus culture includes shared responsibility and people taking action across the university’s mission areas. Actualizing this goal means sustainability is integrated into NC State’s teaching, research, extension, and engagement and the university is practicing the sustainable development of campus. A systems view of sustainability will be necessary to accomplish this vision. In moving toward this culture change, each of the strategic focus areas of academics, research, buildings, energy and water, land use, materials and purchasing, transportation, and waste reduction and recycling, contain a vision for achieving sustainability as well as five-year strategies working toward that vision.

Strategies and visions were created during the 2009-2010 academic year. 128 people representing 76 campus departments and units contributed in large and small ways through CEST to craft pieces of the final sustainability strategic plan. By design, the strategic planning process upheld an open and transparent process and aimed to be representative of the entire NC State campus. The initial focus for this plan was for on-campus efforts with future iterations including expanding programming and engagement efforts beyond NC State’s border. Anyone was able to participate by joining one of the seven CEST working groups covering the strategic focus areas. Participation was promoted using a wide variety of methods and people were asked to contribute through attending a meeting, sending online suggestions, email, or by phone. Following the plan’s creation, the University Sustainability Office vetted the plan across campus to gain additional input.

The entire strategic planning process will be revised every five years and be integrated with other university planning and reporting structures. The Sustainability Strategic Plan is endorsed by x campus entities as a plan that will more NC State to the next level of sustainability.

1. **Introduction**

As an institution of higher education and a land-grant university, NC State has a responsibility to meet the needs of a continuously evolving state. Once of the most pressing needs of our state is to address sustainability as it relates to our environment, society, and economy. Sustainability is inherent to NC State’s mission of teaching, research, extension, and engagement. The information that follows puts sustainability in the context of what it means for NC State and the importance of this sustainability strategic plan.

* 1. **Sustainability in Academic Institutions**

Colleges and universities across the country are seeking to advance sustainability to manage their impact on natural resources and human health. As evidence of this growing field, the Association for the Advancement of Sustainability in Higher Education (AASHE), the association of colleges and universities that are working to create a sustainable future, is x institutional members strong. 666 institutions are signatories of the American College and University Climate Commitment**.**

Academic institutions are a logical fit for becoming models of sustainability. These institutions show the capacity for institutional change in society and educate and create the leaders of tomorrow. By establishing sustainability as a core business value and imbedding the principles into the campus culture, colleges and universities can demonstrate that progress and sustainability coupled together, make for a powerful future. This future includes a flourishing economy, healthy society and quality of life, and responsible stewardship of natural resources. As students leave these institutions sustainability remains a fundamental part of who they are and sustainable behavior resonates through communities.

On a national scale pending legislation surrounding climate change and other environmental issues are in the news daily. Within North Carolina, government agencies, including academic intuitions, are subject to laws governing energy and water reduction, waste reduction and recycling, environmentally preferable purchasing, reducing petroleum and more.[[1]](#footnote-1)

Within the University of North Carolina System, universities must uphold a sustainability policy calling for action in the areas of master planning, design and construction, operations and maintenance, climate change mitigation and renewable energy, transportation, recycling and waste management, and environmentally preferable purchasing.

NC State has made additional commitments to work toward climate neutrality by signing the American College and University Presidents Climate Commitment (ACUPCC), building all new construction to the US Green Building Council’s (USGBC) Leadership in Energy and Environmental Design (LEED) silver standards, and partnering with Energy Star.

* 1. **The Case for Sustainability at NC State**

As described above, the driving forces for sustainability are mounting and NC State has committed to be a leader in advancing sustainability. Advancing sustainability at NC State involves imbedding sustainability in to the campus culture and incentivizing sustainable behavior so that sustainability is a core business value of the university. Of great importance is embracing sustainability while continuing progress towards the university’s mission.

Sustainability is a part of NC State’s land-grant mission through teaching, research, extension, and engagement. In 2007 NC State established five focus areas for the university’s strategic plan: producing leaders for the state, nation, and world; creating educational innovation; improving health and well-being; fueling economic development; and driving innovation and the environment. Sustainability directly relates to each of these focus areas.

Since sustainability, energy and the environment are institutional priorities, there is a need to have a unified approach to looking at sustainability at NC State. NC State has done well in many sustainability areas but to date there has not been an effort to look across these areas and create a comprehensive, coordinated plan. The goal of this plan is to further institutionalize sustainability into all aspects of the university mission and create a comprehensive sustainability program. Implementation of this five-year strategic sustainability plan will continue sustainability as a university priority and fully integrate sustainability into who we are as a campus, while maintaining progress.

At NC State, long-term sustainability is about finding the balance between people, the environment, and the economy both now and in the future. A sustainable NC State manages resources with ecological/environmental limits (water, energy, land, etc), promotes a high standard for quality of life (health and other benefits, educational opportunities, community engagement), and provides means for students, faculty members and staff members to meet economic needs (jobs, lifting people out of poverty, economic diversity) while remaining accountable to taxpayers for responsible use of funds. This describes the desired sustainable campus. However, there is an interim step for achieving this vision. This next step will be achieved when the campus culture includes shared responsibility and people taking action across the university’s teaching, research, extension, and engagement to include sustainability principles and when the university is practicing sustainable development of campus. This sustainability strategic plan helps campus move toward this interim culture change step and ultimate goal of becoming a sustainable campus.

* 1. **Strategic Planning Process**

Sustainability is best evaluated at the systems view level, meaning understanding how the components of sustainability interact and create overall sustainability. However, to create the university’s sustainable path forward, sustainability was broken down into the manageable components of academics and research, buildings, energy and water, land use, materials and purchasing, transportation, and waste reduction and recycling. These components correspond to the CEST working groups. The components could have been organized differently but this classification best represents NC State.

The goal of this planning was be open, engaging, and integrate the community into a single, comprehensive effort to identify goals for achievement over the next five years. The initial focus for the first strategic plan was on-campus efforts. Future iterations will include expanding programming and engagement efforts beyond NC State’s campus borders.

CEST, supported by the University Sustainability Office, guided the strategic planning process and populated working groups around the component themes. CEST membership was appointed and represented faculty members, staff members, and students. During the design of CEST, it was of great importance that anyone interested in sustainability could find a role within the CEST framework. Therefore seven working groups were established in which anyone could participate. Approximately 128 people representing 76 campus departments and units contributed in large and small ways through CEST to create pieces of this plan. [[2]](#footnote-2) The working group sections were then compiled and a systems view regained. The systematic integration section aims to address common systems features such as culture change, understanding the interactions among the components, cost shifting or resource shifting, the business case for sustainability, and incentives for sustainable behavior. Truly capturing the systems view was difficult and might be underrepresented in this plan.

Promoting participation opportunities utilized methods such as announcements in the Technician and Bulletin, list servs, sustainability e-newsletter, campus communicator networks, web sites, campus organizations, podcasts, LED screens across campus, and Facebook. Each presentation given by University Sustainability Office staff included information on how to get involved in CEST and campus sustainability.

Realizing there was not a single process that involved all interested participants, a wide variety of methods and mechanisms in which people could participate were used. Through the seven CEST working groups, anyone on campus or in the community was able to participate in the planning process. Individuals were asked to contribute where they could and input was welcomed through meetings, emails, conversations, and through “submit a suggestion” on the University Sustainability Office web site. Meeting notes and presentations from all working group and CEST meetings were maintained online and available for comment.

Once the draft strategic plan was created the University Sustainability Office vetted the plans and ideas through campus. [Complete following vetting process: x open forums were held….approximate turn out numbers….# groups presented to and # participating].

* 1. **Next Steps and Monitoring Progress**

To ensure the sustainability strategic plan is a living document, guiding campus sustainability decisions, several tracking mechanisms have been put in place. Each strategy will be accompanied by a set of tactics or implementation steps. The tactics will include specific action steps, persons responsible, time frame, and measurable outcomes. As established in the CEST charge, CEST is accountable for implementing the strategies adopted. CEST will evaluate strategy progress annually. CEST will continue to meet on a monthly basis and working groups will continue to welcome new participants and meet as needed. Suggestion submission through the web site and open, transparent meeting formats will be the standard for all CEST meetings. The University Sustainability Office will support CEST in monitoring and implementing the plans.

The entire strategic planning process will be conducted every five years to take the next steps toward long-term visions. To have a mechanism to compare our general sustainability progress to peer intuitions, NC State has enrolled in the Sustainability Tracking and Reporting System (STARS), a program of the Association for the Advancement of Sustainability in Higher Education (AASHE). This peer comparison will be completed every three years.

1. **Strategies**

Collapse some workgroups (land use, buildings, energy, water as example). Important that this plan communicates the goals clearly. Less worried about working group divisions. Possible other way to organize for clarity.

Make sure final effort includes edits such as spell out LEED, etc

Make sure setting context of enrollment growth (example have vision, scope and strategies)

Relook at UVA’s strategic plan

Aim for measurable metrics

Seek policy changes to enhance sustainability (think about as possible strategy). Think through strategy about legislation for energy projects versus across the broad (don’t want legislative chances for each working group). Wording: continue to work with Legislature to enable meeting state laws (financing, etc)

Sustainability is part of NC State’s land-grant mission and some progress had been made. The campus is now ready to take sustainability to the next level. Toward the end goal of achieving an environmentally, socially, and economically sustainable university, NC State will have achieved the next level of sustainability when the campus culture includes shared responsibility and people taking action across the university’s mission areas. Actualizing this goal means sustainability is integrated into NC State’s teaching, research, extension, and engagement and the university is practicing the sustainable development of campus. In moving toward this culture change, each of the strategic focus areas of academics, research, buildings, energy and water, land use, materials and purchasing, transportation, and waste reduction and recycling, contain a vision for achieving sustainability as well as five-year strategies working toward that vision.

One of the most integral parts of the sustainability strategic plan is for its resulting action to be a cohesive plan with a systems view of sustainability where each of the strategies are recognized and addressed as interconnected with each other. The nature of sustainability is coordinating across all of the strategy areas to reflect a comprehensive sustainability program, across NC State’s mission.

* 1. **Strategic Integration Strategies**

**Vision**Faculty members, staff members, students, and community members from a diversity of backgrounds are sought to collaborate on sustainability issues. The interconnectedness among strategies is understood and action is taken to create solutions that benefit a number of sustainability areas simultaneously.

**Strategies**Adopt an aggressive sustainability policy that includes academics, research, buildings, energy, water, land use, purchasing, transportation, and waste reduction.

Create a communications and marketing plan that sends a cohesive, campus wide message regarding sustainability

* Develop a mission and vision for NC State sustainability
* Establish communications methods that make interactions among the CEST working groups and other diverse sustainability stakeholders easier and more consistent
* Develop and communicate the business case for campus sustainability

Encourage the matching of student and faculty member projects to NC State’s physical campus and establishing roles for volunteers

Instill the values of total cost of ownership and total life cycle costing in to purchasing and project decision making

Investigate funding opportunities further sustainability

* Develop a student sustainability fee to provide seed money for student sustainability projects
* Work with Advancement Office to align messaging of next university-wide campaign around energy & the environment and the needs in the classroom, buildings, infrastructure, and programming

Establish mechanisms to track, assess, and communicate sustainability progress

Further develop the University Sustainability Office as the central location for sustainability coordination

* Position the University Sustainability Office as a unit that functions across academics, research, and facilities units and departments
* Achieve better balance of the University Sustainability Office funds from institutional sources
* Serve as a coordination point for sustainability-related groups
  1. **Academic** **Strategies**

**Vision**

Sustainability is an integral part of the NC State educational experience. Students, faculty members, and staff hold a holistic, multidisciplinary understanding of sustainability and apply it daily. When students leave campus, sustainability is a fundamental part of their life and is reflected in their behavior.

**Strategies**

Improve utilization of teaching spaces

* Consider year-round curricula as a way to increase sustainability
* Increase efficiency of space allocations (cross reference or move to Land Use/space)
* Improve capacity to adjust classroom size to enrollments (cross reference or move to Land Use/space)

Increase sustainability content in courses and the curriculum

* Complete an inventory of sustainability content in existing courses
* Identify and fill instructional gaps in sustainability courses and curricula
* Provide tools and incentives for faculty members to increase sustainability content in courses
* Require all academic units provide sustainability content in courses by 2015
* Advance new/revised interdisciplinary curricula that includes sustainability in local, regional, and global context both in the near-term and long-term
* Require sustainability content in general education program (GEP) courses

Provide opportunities for student sustainability involvement outside the traditional classroom

* Create hands-on sustainability living and learning opportunities for students in residence halls
* Promote student engagement with sustainability projects on and off-campus
* Provide academic credit for students with service learning activities involving sustainability
* Use campus as a model to teach sustainability concepts

Provide additional access for students to participate in sustainability activities

* Ensure all students have exposure to courses with sustainability content by 2015
* Increase visibility of sustainability courses and curricula to students
* Provide access to sustainability courses and curricula via distance education
  1. **Research Strategies**

**Vision**

NC State is a leading university in developing innovative ideas and leaders for a sustainable future. Faculty members and students are drawn to NC State to become involved in sustainability research.

**Strategies**

Improve utilization of research spaces

* Seek opportunities to optimize and conserve energy used for buildings and equipment
* Provide incentives for sharing research space and equipment
* Provide incentives for resource efficiency and conservation

Increase sustainability research

* Complete an inventory of research needed to advance sustainability
* Identify gaps and implement strategic hiring (cluster hires) needed to advance sustainability
* Establish a centralized sustainability research web site to communicate sustainability research efforts to internal and external audiences
* Provide resources to stimulate undergraduate and graduate research for sustainability
* Provide incentives for faculty members to pursue research on sustainability
* Promote sustainability research in campus facilities and native landscapes
  1. **Building Strategies**

Reference energy and water reduction section reduction goals (some for, some like consolidate in sections)

Footnote or refer to appendix for programs (some might need brief definitions)

**Vision**

Buildings are designed, operated, maintained and preserved in a sustainable and efficient way to effectively meet or exceed the university’s needs. Buildings communicate and demonstrate sustainability values to current and future generations.

**Strategies**

Apply sustainable practices to all buildings and renovations, including private buildings

* Undertake holistic building renovations that include conservation of all natural resources
* Adopt a sustainability vision statement or include it as part of the scope statement for all projects
* Uphold NC State’s commitment to build LEED silver minimum buildings for all projects over 20,000 gross square feet (strive for higher certification levels)

Account for climate neutrality goals in capital improvement projects

* Embrace adaptive reuse of existing structures
* Optimize physical building footprints (cross reference or move to Land Use/space)
* Design and construct flexible spaces that can be easily repurposed
  1. **Dining Strategies**

Tracy - talk with Dining about local/organic type strategy (reference other dining strategies in WRR and Purchasing sections

* 1. **Energy & Water Strategies**

Clarify the BTU reduction numbers

Clarify what a hedge strategy is

Clarify what meant by data management in tactics (metering, etc)

Make sure to have energy supply strategies in CAP ( generating and delivering energy)

Fold energy outreach point under outreach section

Consider looking at other financing strategies including performance contracting (broaden language and see comment about legislation above)

**Vision**

The university actively participates in national and international cooperative initiatives that pursue development of green and sustainable energy and water technologies. These innovative technologies are applied at NC State and result in efficient use of energy and water, provide excellent air quality and comfort, and improve productivity of students, faculty members, and staff. Evaluating the total cost of building, equipment, and product ownership is the standard.

**Strategies**

Achieve a 20% reduction in building energy consumption by 2015 (target reduction to 137,510 BTUs/GSF), with a stretch goal of achieving a 30% reduction (target reduction to 120,322 BTUs/GSF), compared to the 2002-2003 baseline (171,888 BTUs/GSF)

Achieve a 45% reduction in building water consumption through 2015 (target reduction to 0.0363 CCF/GSF), with a stretch goal of achieving a 50% reduction (target reduction to 0.033 CCF/GSF), compared to the 2001-2002 baseline (0.066 CCF/GSF)

Improve energy data management capability to make data-driven energy decisions

Ensure a cost-effective and stable energy supply by developing business scenario hedge strategies

Reduce energy and water use in all facilities

* Use return on investment calculations to help prioritize and guide energy conservation projects (“energy smart” repairs)
* Further develop Energy Performance Contracting as a means to achieve energy savings

Integrate energy conservation as a core business value of NC State

* Enhance energy awareness program and align with other outreach programs
* Create buy in with Facilities staff and building end-users to properly operate building systems in an energy efficient manner
* Evaluate utility billing options that create incentives for saving energy
  1. **Land Use Strategies**

Aiming to have land use strategies for distribution week of 2/15

Examples: create management plan for Lake Raleigh Woods, create storm water master plan, develop space management plan (caution of sweeping statement of space management plan, possibly break down into something more specific such as develop a tool or metric)

**Vision**  
The university practices responsible, innovative, and practical site design and site management that preserves natural ecosystem functions, fosters thriving plants and wildlife, restores air and water quality, enhances the health of the surrounding community, supports human-scaled neighborhoods and paths and mixed-use activities, and connects campus as a part of the greater city context.

**Strategies**  
Not yet available. Categories for strategies will be:

* Use of space (better space utilization, mixed use neighborhoods, increase students living on campus, parking, shared open space)
* Restoration and Preservation (natural areas, environmentally-sensitive areas)
* Conservation (site plans, existing topography, low impact development, building siting, wildlife corridors, urban forestry)
* Grounds Management (native /adaptive plants, low maintenance landscapes, mulching/compost/reuse on campus, integrated pest management, animal waste)

Make sure something about reducing sprawl/ compact design/density/compressed living

Moving faculty member instead of student/strategically locating and scheduling classes to reduce travel

Sustainable hardscapes and plant material to demonstrate

* Storm water management (master plan, update design and construction guidelines, pervious pavement, prominent storm water features for education)

Ideas from other sections:

Maximize space utilization (reference in multiple sections)

* Optimize building usage and operation schedules

Reduce sprawl/compact design/density/compressed living

Strategically locating and scheduling classes to reduce travel (move the faculty member instead of the students)

Sustainable hardscapes and plant material

* 1. **Materials & Purchasing Strategies**  
     Tie into vision – let campus know there are other (sustainable) options to conventional purchases

**Vision**

NC State’s entire supply chain includes environmental and social performance. Campus will be actively engaged in and knowledgeable about smart purchasingoptions.

**Strategies**

Provide goals and direction for how to foster environmentally and socially responsible purchasing

* Help individual departments further develop the university’s sustainability policy to focus on specific needs

Help campus increase the amount of sustainable materials purchased

Develop a tracking system for sustainable purchases on campus

Work with MarketPlace vendors to highlight sustainable items on their electronic ordering sites

Develop bid specifications that require vendors to provide sustainable options for their products

* 1. **Transportation Strategies**

Brian will provide some wording modifications

Clarify what meant by “right fuel-efficient” vehicle

Make clearer in vision – want campus to feel differently, eliminate single occupancy vehicles

Suggestion to evaluate attaining LEED points for reduced permitting costs for low emitting vehicle permitting

**Vision**

Alternative transportation methods are the preferred method to get to, from, and around campus. Bicyclists and pedestrians feel safe moving around campus. Campus residents move among NC State’s three main campuses speedily and with ease. NC State’s own fleet is a model of matching the right fuel-efficient vehicle with the need and utilizing available low-emission and alternative fuel technology.

**Strategies**

Develop new infrastructure and programs that promote additional bicycling and pedestrian trips between and among campuses

Decrease traffic congestion on main campus thoroughfares

* Pilot roadway access restrictions to reduce daytime vehicle "through" traffic
* Enhance Wolfline transit system speeds and schedule reliability
* Promote a safer walking and bicycling atmosphere

Reduce the consumption of and demand for petroleum in university fleets

* Increase alternative fuel vehicles in university motor pool and departmental fleets
* Reduce vehicle fuel usage

Continuously refine and market Wolfline services to accommodate increased rider demand and changing travel needs within and between campus precincts, especially Centennial to Main connections

Promote and increase use of Triangle Transit and Capital Area Transit services to campus

Intensify marketing for and use of campus perimeter commuter parking opportunities

* Improve frequency and dependability transit connections to core campus destinations

Reduce single occupancy vehicle trips to, from, and around campus

* Leverage parking permit pricing and policies to encourage a "park it and leave it" perimeter parking philosophy
* Increase carpooling
* Shift unnecessary single occupancy vehicle trips to Wolfline, bicycling, and pedestrian alternatives

Embrace communications technology such as teleconferencing and video conferences to reduce the need for travel

* 1. **Waste Reduction & Recycling Strategies**

**Vision**

The university culture views waste as a potential loss of resources. Source reduction is the first line of defense for waste reduction, followed by reuse and recycling efforts. Campus will be actively engaged in and knowledgeable about waste reduction efforts.

**Strategies**

Achieve a 60% diversion rate by 2015, with a stretch goal of achieving a 65% diversion rate by 2015

Develop a comprehensive closed loop program to capture organic waste (food waste, greenhousematerials, yard waste, etc) for composting and utilize the composted product on campus

Develop a more extensive outdoor walkway recycling program to capture additional recyclablematerials and remove them from the waste stream

Collaborate with the Materials and Purchasing work group to implement source reduction and environmentallypreferable purchasing initiatives to decrease waste before it happens

Work towards an overall cultural shift on campus which leads the community to view waste as aresource and to feel a sense of responsibility and ownership for the reduction of waste

Continuously educate the campus community utilizing a multifaceted approach that will encouragepersonal responsibility toward waste diversion goals and provide information and updates regardingprograms, services and diversion opportunities

Continuously strive to streamline, increase and improve services and programs including operationalefficiencies and customer service

* 1. **Campus Education and Outreach Strategies**

**Vision**

Educational programs foster an environment of increased awareness and participation resulting in measurable and sustainable reduction in resource use. Individuals take personal responsibility and ownership for their impact on the use of natural resources.

**Strategies**

Begin establishing a campus culture that embraces personal responsibility and emphasizes action in creating a sustainable campus and community

* Launch campus-wide campaign utilizing community-based social marketing techniques
* Align sustainability-related outreach programs (sustainability, waste reduction and recycling, energy, alternative transportation)

Make campus-wide sustainability efforts and progress more visible

* Create a coordinated local, regional, and national local media campaign to share NC State success stories
* Integrate sustainability into NC State branding and advancement campaigns
* Standardize sustainability messaging across departments, administration and colleges

Further develop sustainability-related event traditions such as Earth Day and Campus Sustainability Day

* Increase participation of students, faculty members, and staff in sustainability-related activities and events

Maintain regular informal and formal networking and educational opportunities

Develop campus wide recognition mechanisms for participating in sustainable behavior

**Appendix A - Sustainability Laws and Commitments Applicable to NC State**

**State of North Carolina Laws**

|  |  |
| --- | --- |
| Executive Order 156 - State Government Environmental Sustainability | Reduction of solid waste, and procurement of environmentally preferable products. Set goal of diverting 40% of solid waste from the landfill. Requires annual reporting of solid waste and recycling rates to the NC Division of Pollution Prevention and Environmental Assistance.  [www.p2pays.org/ref/03/02221.pdf](http://www.p2pays.org/ref/03/02221.pdf) |
| NC General Statute 130A-309.14 – Collection of Recycling | Requires state agencies to establish a program for the collection of all recyclable materials generated in state offices throughout North Carolina.  Link |
| NC General Statute 130A-309.10 – Landfill Bans | Bans the following items from disposal in landfills: used oil, yard waste, white goods, antifreeze (ethylene glycol), aluminum cans, whole scrap tires, lead-acid batteries**,** beverage containers, Motor vehicle oil filters, recyclable rigid plastic containers that have a neck smallerthan the body of the container, and that accept a screw top, snap cap, or other closure, wooden pallets, and oyster shells  link |
| NC General Statute 143-64 (Senate Bill 668) - Energy Conservation in State Buildings | Energy consumption in all existing State buildings will be reduced by 20% by the year 2010, and 30% by the 2015 relative to fiscal year 2002-03. All new State buildings will be 30% more efficient than ASHRAE standard 90.1-2004. All State agencies will develop a comprehensive plan to manage and report their utilities each fiscal year to the State Energy Office and Department of Administration. New water systems shall be designed and constructed to use a minimum of 20% less potable water than indoor water use baseline calculated for the building after meeting the fixture performance requirements by the 2006 North Carolina Plumbing Code.  <http://www.ncleg.net/Sessions/2007/Bills/Senate/HTML/S668v6.html> |
| **NC Session Law 2005-276 –** Petroleum Reduction | 20% petroleum reduction by Jan 1, 2010  [www.ncleg.net/Sessions/2005/Bills/Senate](http://www.ncleg.net/Sessions/2005/Bills/Senate) |

**University of North Carolina General Administration Policies**

|  |  |
| --- | --- |
| UNC General Administration Sustainability Policy 600.61 | Calls for action in the areas of master planning, design and construction, operations and maintenance, climate change mitigation and renewable energy, transportation, recycling and waste management, and environmentally preferable purchasing. link |

**NC State University Commitments**

|  |  |
| --- | --- |
| American College and University Presidents Climate Commitment | Commitment to work toward climate neutrality  [www.presidentsclimatecommitment.org/](http://www.presidentsclimatecommitment.org/) |
| LEED Silver buildings | Commitment that all new NC State buildings will be a minimum of LEED silver certified  [www.usgbc.org](http://www.usgbc.org) |
| Energy Star Partnership | Encouraging purchase of Energy Star equipment and appliances  [www.energystar.gov/index.cfm?c=partners.pt\_index](http://www.energystar.gov/index.cfm?c=partners.pt_index) |

**NC State Guiding Documents Impacting Sustainability**

|  |  |
| --- | --- |
| Physical Master Plan | [www.ncsu.edu/facilities/physical\_master\_plan/index.htm](http://www.ncsu.edu/facilities/physical_master_plan/index.htm) |
| Campus Life Master Plan | [www.ncsu.edu/facilities/publications/master\_planning\_studies/pdfs](http://www.ncsu.edu/facilities/publications/master_planning_studies/pdfs) |
| Centennial Master Plan | [www.centennial.ncsu.edu/masterPlan/index.html](http://www.centennial.ncsu.edu/masterPlan/index.html) |
| Design and Construction Guidelines | [www.ncsu.edu/facilities/con\_guidelines/](http://www.ncsu.edu/facilities/con_guidelines/) |
| Strategic Energy & Water Plan | [www.ncsu.edu/energy/2008/annualreports.php](http://www.ncsu.edu/energy/2008/annualreports.php) |
| NC State Commitment to Environmental Sustainability (May 1999) | [www.ncsu.edu/sustainability/history.php](http://www.ncsu.edu/sustainability/history.php) |
| 2006 Campus Environmental Sustainability Assessment | [www.ncsu.edu/sustainability/publications.php](http://www.ncsu.edu/sustainability/publications.php) |

1. See Appendix A for a list of sustainability laws and commitments that bind NC State [↑](#footnote-ref-1)
2. A full list of contributors can be found on page x. [↑](#footnote-ref-2)