

UNC CHARLOTTE

# UNC Charlotte Sustainability Plan

2010

# UNC Charlotte

## Sustainability Plan 2010

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Introduction from the Vice Chancellor Business Affairs

### A few words from the Sustainability Coordinator

The Sustainability Plan presented in this document, aims to provide a road map for the growth of sustainability at the University of North Carolina at Charlotte. As with the beginning of many journeys there will be cause to change direction, which will arise out of necessity or desire. However, that unknown future cannot and should not stop us from staking out goals on how the university is to approach infusing sustainability into this institution.

This plan expands on the findings of the Sustainability Assessment Report of 2008/9 and lays out a sustainability program in the four core functions of the university:

- ▶ Vision
  - ▶ To be the regional model of sustainable stewardship through the social, economic and ecological legacy we create.
- ▶ Mission
  - ▶ All citizens of the university understand the impacts and consequences of our activity on the natural systems that support our life. And that this knowledge guides the research, education, outreach and operations of the university.

➤ Curriculum and research

➤ Culture and community

➤ Outreach and partnership

➤ Business operations

Each function area and subsection will start with a Vision of Sustainability for that particular area which describes the end goal. Following on from the vision statement are a set of recommended goals and corresponding actions that may be taken by the University toward achieving the vision. Finally a list of recommended indicators are defined that will measure progress to becoming a sustainable campus.

This initiative to become a sustainable campus will require the collective efforts and talents of all members of the university. In the process, we will be challenged to change the way in which we currently operate, but it is hoped that we will not be deterred from achieving our goals.

David Jones  
Sustainability Coordinator



Sustainability Plan

# 1: Curriculum and Research.





## 1. Vision - Education

The UNC Tomorrow report (2007) asks that UNC institutions “*educate its students to be personally and professionally successful in the 21<sup>st</sup> century...*” Developing the sustainability literacy of students will give them an additional set of skills to meet the ever increasing demands of the business, insurance, engineering and other industry sectors clamoring for graduates with this knowledge. UNC Tomorrow also finds that “*UNC should embrace environmental sustainability as a core value amongst its institutions*”. This is also a commitment of UNC Charlotte as communicated by the sustainability vision statement:

*“To be the regional model of sustainable stewardship through the social, economic and ecological legacy we create”*

This vision may only be fulfilled if our graduating students are knowledgeable about sustainability.

UNC Charlotte should seek to enable all students enrolled and who graduate to understand the principles of sustainable development and to provide them the skills needed to incorporate and implement sustainability in their chosen careers. This skill base and knowledge may be transferred to the students via the curriculum, research projects and operations of UNC Charlotte.

The above vision may be achieved by implementing the following short and long term goals and actions.

## 2. Goals and Actions:

The following strategies were developed via a feedback session with UNC Charlotte faculty, the UNC Charlotte Sustainability Committee and the AASHE Sustainability Tracking, Assessment & Rating System.

## 2.1 Short term goals and actions 1-5 Years.

<p><b>Goal 1:</b> Suffuse sustainability principles in university curricula.</p>	<p><i>Action 1:</i> Define sustainability in the curriculum and identify sustainability focused or related courses currently offered.  <i>Action 2:</i> Conduct a study on the desirability and feasibility of altering curricula in existing courses or the requirements themselves to ensure sustainability literacy is developed.  <i>Action 3:</i> Undertake sustainability literacy assessment funded by the University, to determine current knowledge of sustainability.  <i>Action 4:</i> Engage departmental chairs to promote sustainability and identify academic importance of sustainability studies and research.</p>
<p><b>Goal 2:</b> Equip faculty with resources to facilitate sustainability curricula development.</p>	<p><i>Action 1:</i> Faculty development programs to be focused on sustainability encouraging and supporting the development of curriculum materials and projects based on sustainability: (Koestar et al 2006)  <i>Action 2:</i> Develop incentives for faculty to develop sustainability courses such as:</p> <ul style="list-style-type: none"> <li>• Assistance in obtaining grant funding</li> <li>• Offering release time</li> <li>• Providing free workshops</li> <li>• Giving stipends for attending workshops</li> </ul>
<p><b>Goal 3:</b> Support co-curricula sustainability education programs.</p>	<p><i>Action 1:</i> Establish annual sustainability related competitions that engage all levels of students, faculty, and staff.</p>
<p><b>Goal 4:</b> Establish a baseline percentage of research dollars to be spent on sustainability focused or related research.</p>	<p><i>Action 1:</i> Engage campus research community to define and identify sustainability focused or related research.  <i>Action 2:</i> Track sustainability funded research dollars.  <i>Action 3:</i> Establish baseline percentage number of dollars to be dedicated to sustainability focused or related research.  <i>Action 4:</i> Support interdisciplinary sustainability focused research activities.</p>
<p><b>Goal 5:</b> Offer sustainability certificates through continuing education programs.</p>	<p><i>Action 1:</i> Canvass local business to ascertain sustainability certificate needs.  <i>Action 2:</i> Leverage university institutions, centers, colleges and departments to provide infrastructure for continuing education sustainability certificates.</p>
<p><b>Goal 6:</b> Faculty obtains credit toward tenure from contributing to sustainability initiatives.</p>	<p><i>Action 1:</i> Submit a recommendation to Provost on rewarding faculty credit toward tenure for engaging in sustainability initiatives.</p>

## 2.2 Long term goals and actions (5+ Years) (adapted from AASHE 0.5 2008)

<p><b>Goal 1:</b> Establish undergraduate and graduate sustainability degree programs.</p>	<p><i>Action 1:</i> Establish sustainability focused academic courses.  <i>Action 2:</i> Establish sustainability related academic courses.  <i>Action 3:</i> Offer at least one sustainability undergraduate degree in each college.  <i>Action 4:</i> All students should take sustainability courses as a graduation prerequisite.</p>
<p><b>Goal 2:</b> Leverage the UNC Charlotte Research Institute capabilities to transform the local and national economy toward a new sustainable economy</p>	<p><i>Action 1:</i> Establish a Sustainability Institute to focus on sustainability research.</p>

## 3. Measurement Indicators

Indicators
Percentage of established sustainability focused and related academic courses
Percentage of budgets and stipends available to support education for sustainability
Percentage of students enrolled in sustainability focused and related courses
Number co-curricular sustainability events held on campus
Percentage of research money applied to sustainability research
Percentage of departments involved in sustainability research

## 4. References

Koestar R J, Eflin J, Vann J, 2006 *Greening of the campus: a whole systems approach* Journal of Cleaner Production 14 pp 769-779

Sustainability Tracking, Assessment & Rating System (STARS) for Colleges and Universities 2009 Association for the Advancement of Sustainability in Higher Education

UNC Tomorrow Commission Final Report 2007  
[http://www.nctomorrow.org/content.php/reports\\_documents/commission/Final\\_Report.pdf](http://www.nctomorrow.org/content.php/reports_documents/commission/Final_Report.pdf)  
 University of North Carolina General Administration

## 2: Culture and Community



# 1. Vision – Culture and Community

All UNC Charlotte community members will be cognizant of their environmental footprint and recognize the actions that will need to be undertaken as responsible citizens to improve their environmental footprints. Sustainability will be viewed as apolitical and become intrinsic within the decision making process of the university administration. There will be opportunities and outlets to practice sustainability on campus and students will be given the tools to practice lifelong sustainability.

## 2. Goals and Actions:

The following strategies were developed through examining best practices, the results of the sustainability assessment findings and feedback from UNC Charlotte personnel and students.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Establish a program to promote the sustainability agenda so sustainability is (becomes) a core value of the university and establish a reporting matrix.</p>	<p><i>Action 1:</i> Having metrics and up-to-date energy usage information available for students and other UNCC community members to view.  <i>Action 2:</i> Incorporate sustainability in student, faculty and staff orientation activities and implement sustainability training for all staff in conjunction with Environmental Health and Safety Office.  <i>Action 3:</i> Institute Campus Sustainability speaker series.  <i>Action 4:</i> Establish sustainability based learning community.  <i>Action 5:</i> Promote and encourage campus wide sustainability based events and student groups.  <i>Action 6:</i> Encourage sustainability based freshman reading projects.  <i>Action 7:</i> Publish annual campus sustainability reports.</p>
<p><b>Goal 2:</b> Identify sustainable actions, practices and programs on campus via a green branding program.</p>	<p><i>Action 1:</i> Develop a green branding logo available to university students, faculty and staff.  <i>Action 2:</i> Undertake awareness campaign to promote campus sustainability.</p>

## 2.2 Long term goals and actions (5 years +)

<p><b>Goal 1:</b> Sustainability becomes a core element of the University Strategic Plan.</p>	<p><i>Action 1:</i> Sustainability criteria to be incorporated in departmental plans.  <i>Action 2:</i> Inform administration of sustainability best practices.  <i>Action 3:</i> Prioritize funding of sustainability initiatives.</p>
<p><b>Goal 2:</b> Sustainability criteria are written into University endowment investment policies.</p>	<p><i>Action 1:</i> Sustainability Committee to provide recommendations on establishing sustainability criteria in University endowment investment policies.</p>

## 3. Measurement Indicators

Indicators
Percentage of employees who have environmental requirements in job descriptions
Percentage of employees/students receiving sustainability training at orientation
Number of grass roots clean up and recycling initiatives sponsored or self implemented
Track the number of sustainability speaker events on campus

## 3: Outreach and Partnership



# 1. Vision - Outreach and Partnership

Leverage the existing outreach and partnership infrastructure to build strong links with businesses, NGOs and government to promote and incorporate sustainable development principles in the local and national community. The University will aim to share and support good practice and engage local government, NGOs and businesses in advancing regional sustainability.

## 2. Goals and Actions

The following strategies were developed through examining best practices, the results of the assessment findings in part on the assessment and feedback from UNC Charlotte personnel.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Strengthen links and relationships to the regional community to advance regional sustainability goals.</p>	<p><i>Action 1:</i> Develop metrics for tracking community sustainability activities.  <i>Action 2:</i> Leverage the Open for Business (OFB) Initiative to study ways in which universities can improve their relationships with industry to promote sustainability.  <i>Action 3:</i> Leverage The Office of Educational Outreach (OEO) which serves to foster collaborative relationships between the university, surrounding schools, public agencies, and the community. This activity will facilitate numerous conferences, institutes, professional development activities, and symposia to promote sustainability.</p>
<p><b>Goal 2:</b> Increase awareness of sustainable development in the local community.</p>	<p><i>Action 1:</i> Promote sustainability learning opportunities to local community leaders.  <i>Action 2:</i> Use the University’s sustainable practices as learning tools.</p>
<p><b>Goal 3:</b> UNC Charlotte will aim to become recognized as a leader in regional sustainability.</p>	<p><i>Action 1:</i> Track and recognize university generated initiatives that engage the institution on regional sustainability efforts.</p>

## 3. Measurement Indicators

Indicators
Percentage of volunteers participating in sustainability programs.
Number of sustainability education programs or materials provided for the community.
Resources applied to support community sustainability programs.



## 4: The Built Environment



## 1. Vision – Built Environment

Our built environment activities should promote and develop the use of renewable resources that reduce dependence on extracted underground materials and minerals. Our built environment will aim to protect nature’s function and diversity by reducing dependence on synthetic materials, by utilizing safe biodegradable alternatives and reducing wastes introduced into society. The University will aim to support sustainable practices within our supply chains and not degrade the ecosystem with our development and operational activities.

## 2. R Goals and Actions

The following strategies were developed through examining best practices, the results of the assessment findings in part on the assessment and feedback from UNC Charlotte personnel.

### 2.1 Short term recommended goals and actions (1-5 years)

<p><b>Goal 1:</b> Develop a sustainable campus through sustainable operational practices, completing sustainability audits and developing sustainability focused performance standards.</p>	<p><i>Action 1:</i> Establish a high performance buildings process/policy for new construction and renovations meeting the USGBC LEED Silver or equivalent standard by 2011.  <i>Action 2:</i> At a minimum, establish LEED commercial interiors silver, LEED core and shell silver or equivalent standard for major renovations and interior refits by 2011.  <i>Action 3:</i> Establish sustainability criteria in Design Guideline Manual.</p>
<p><b>Goal 2:</b> Operate and maintain campus in a way to utilize resources as efficiently as possible and reduce wastes.</p>	<p><i>Action 1:</i> At a minimum, establish meeting LEED existing building silver or equivalent high performance operating standard for building operations and maintenance activities by 2011.  <i>Action 2:</i> Housekeeping services shall undertake a sustainability audit of operations, identifying current actions meeting or exceeding environmental standards such as Green Seal GS -42 or equivalent standard and identify continual improvement action areas.  <i>Action 3:</i> Design buildings to be retrofitted with renewable energy technologies.</p>
<p><b>Goal 3:</b> Support the preservation of highly productive ecological land.</p>	<p><i>Action 1:</i> Establish campus reserve.</p>

## 2.2 Long term goals and actions (5+ years)

<p><b>Goal 1:</b> Rely on 80% renewable energy sources to provide new building annual energy use by 2040.</p>	<p><i>Action 1:</i> Design buildings to be retrofitted with renewable energy technologies when resources permit and economically viable solutions become available.</p>
<p><b>Goal 2:</b> Eliminate or substitute the use of substances that cannot be safely broken down and safely absorbed in nature.</p>	<p><i>Action 1:</i> Develop a database of sustainable classified products for use by architects and builders. <i>Action 2:</i> Develop and implement product/substance substitution plan.</p>
<p><b>Goal 3:</b> Begin discussions on regenerative and restorative design.</p>	<p><i>Action 1:</i> Raise awareness to educate campus community on regenerative and restorative design.</p>

## 3. Measurement Indicators

Indicator
Square footage of LEED (or equivalent) Standard as percentage of all campus buildings
Renewable energy use per gross square foot

# 5: Energy and Water Management



## 1. Vision – Energy

UNC Charlotte will work to transform its energy consumption mix by reducing the use of non-renewable energy and increasing the use of renewable energy for campus operations as the technology becomes available. This will be achieved by sourcing renewable energy as a primary supply, generating renewable energy on site and embarking on comprehensive energy conservation and education programs.

## 2. Goals and Actions

The following actions and goals are designed to achieve the stated vision by encouraging the university to implement procedures and policies to encourage energy efficiency and utilize renewable energy resources.

### 2.1 Short term goals and actions (1- 5 years)

<p><b>Goal 1:</b> Develop revolving funding sources for energy efficiency programs on campus.</p>	<p><i>Action 1:</i> Create a revolving energy fund.</p>
<p><b>Goal 2:</b> Increase energy efficiency and conservation.</p>	<p><i>Action 1:</i> Implement an Energy Star procurement policy.  <i>Action 2:</i> Utilize Sustainability Website to provide campus community with real time data tracking emissions and energy use.  <i>Action 3:</i> Implement campus energy reduction competitions and create energy best practices section of Sustainability Website for use by campus community.  <i>Action 4:</i> Implement comprehensive building energy audit programs.  <i>Action 5:</i> Incorporate energy efficiency goals in to master planning, new construction and major renovation projects.  <i>Action 6:</i> Encourage and facilitate operational and academia partnerships to investigate, test and recommend energy reduction technologies and strategies for use on UNC Charlotte Campus</p>

## 2.2 Long term goals and actions (5+ years)

<p><b>Goal 1:</b> UNC Charlotte will aim to use energy generated from renewable resources and where feasible by onsite generation.</p> <ul style="list-style-type: none"> <li>• 15% by 2015</li> <li>• 30% by 2020</li> <li>• 60% by 2030</li> <li>• 80% by 2040</li> </ul>	<p><i>Action 1:</i> Create a sustainable energy policy <i>Action 2:</i> Develop renewable energy strategic plan.</p>	
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## 3. Measurement Indicators

Indicator
KBTU/GSF Energy consumption from renewable per KBTU/GSF

## 1. Vision – Water

To provide access to water for living, education, research and campus operations. Reclaimed water shall be used in all suitable applications. Rain water shall be harvested for use on campus and best practice storm water management techniques may be used to reduce stormwater runoff and associated pollution to local water sources.

## 2. Goals and Actions

The following actions and goals are designed to achieve the stated vision by encouraging the university to reduce potable water used at UNC Charlotte and improve the quality of local water resources.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Maximize efficient use of potable water in campus facilities.</p>	<p><i>Action 1:</i> Support implementation of campus strategic water plan.  <i>Action 2:</i> Implement leak detection procedure.  <i>Action 3:</i> Plan for future water resource constraints.  <i>Action 4:</i> Undertake campus water use audits.  <i>Action 5:</i> Implement program to procure water and energy-efficient products.  <i>Action 6:</i> Meter all irrigation systems</p>
<p><b>Goal 2:</b> Use reclaimed and harvested rainwater in operations where practical, such as cooling tower make up water, toilets and irrigation purposes.</p>	<p><i>Action 1:</i> Investigate and recommend appropriate rainwater harvesting systems.  <i>Action 2:</i> Design facilities to utilize non-potable water where applicable.  <i>Action 3:</i> Build facilities with dual plumbing infrastructure.</p>

### 2.2 Long term goals and actions (5 + years)

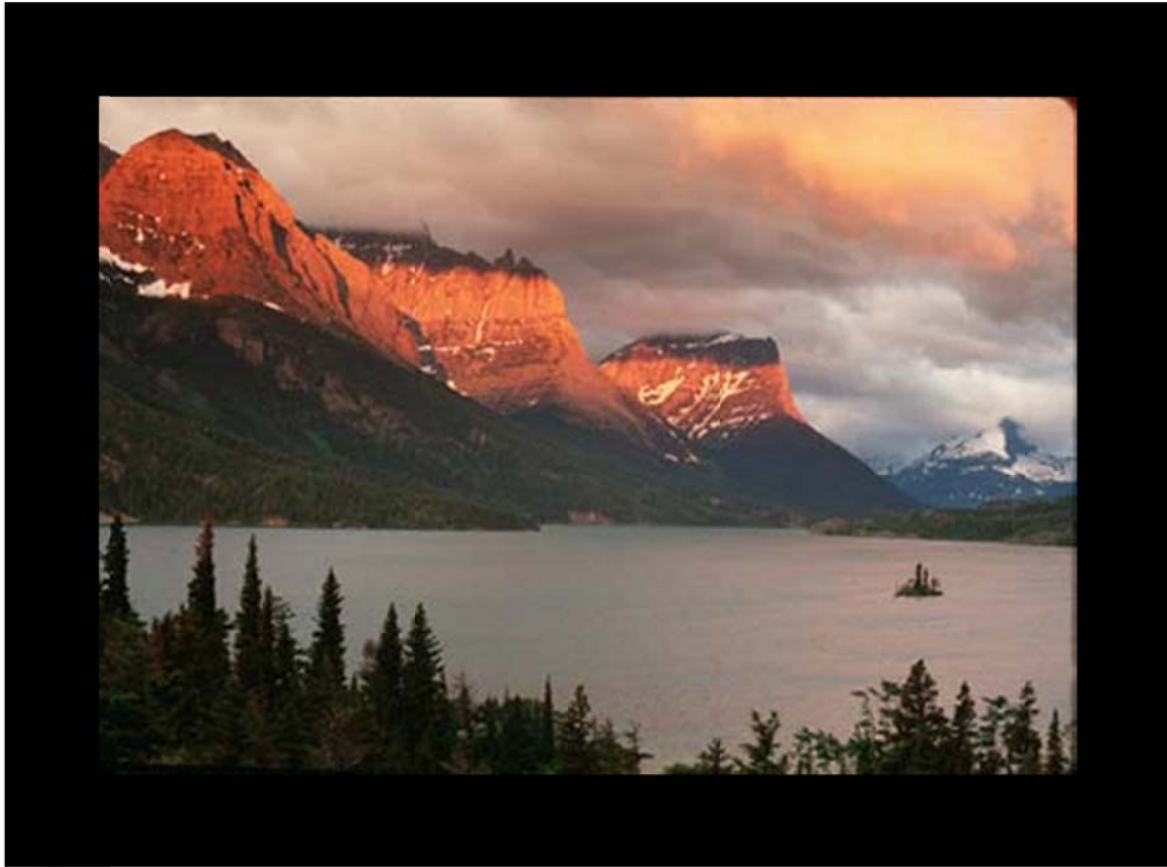
<p><b>Goal 1:</b> Utilize reclaimed water for all non potable water uses on campus.</p>	<p><i>Action 1:</i> Develop closed loop water systems for buildings where all waste water is reused on site and storm water is collected and reused for uses such as irrigation, toilets and cooling.</p>
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### 3. Measurement Indicators

<b>Water indicators</b>
Gallons of water used per GSF
Gallons reclaimed water used GSF
Gallons of harvested water annually GSF
Gallons potable water use GSF



# 6: Climate



# 1 Vision

UNC Charlotte shall seek to understand the impact of its activities on the climate and will develop mitigation strategies to become green house gas neutral. UNC Charlotte shall endeavor to educate students on climate change and leverage its research capabilities to find solutions to climate change.

## 2 Goals and Actions:

The recommended goals and actions were developed via feedback sessions with UNC Charlotte faculty, staff and students and also take into account the requirements of the recently signed American College and University Presidents Climate Commitment.

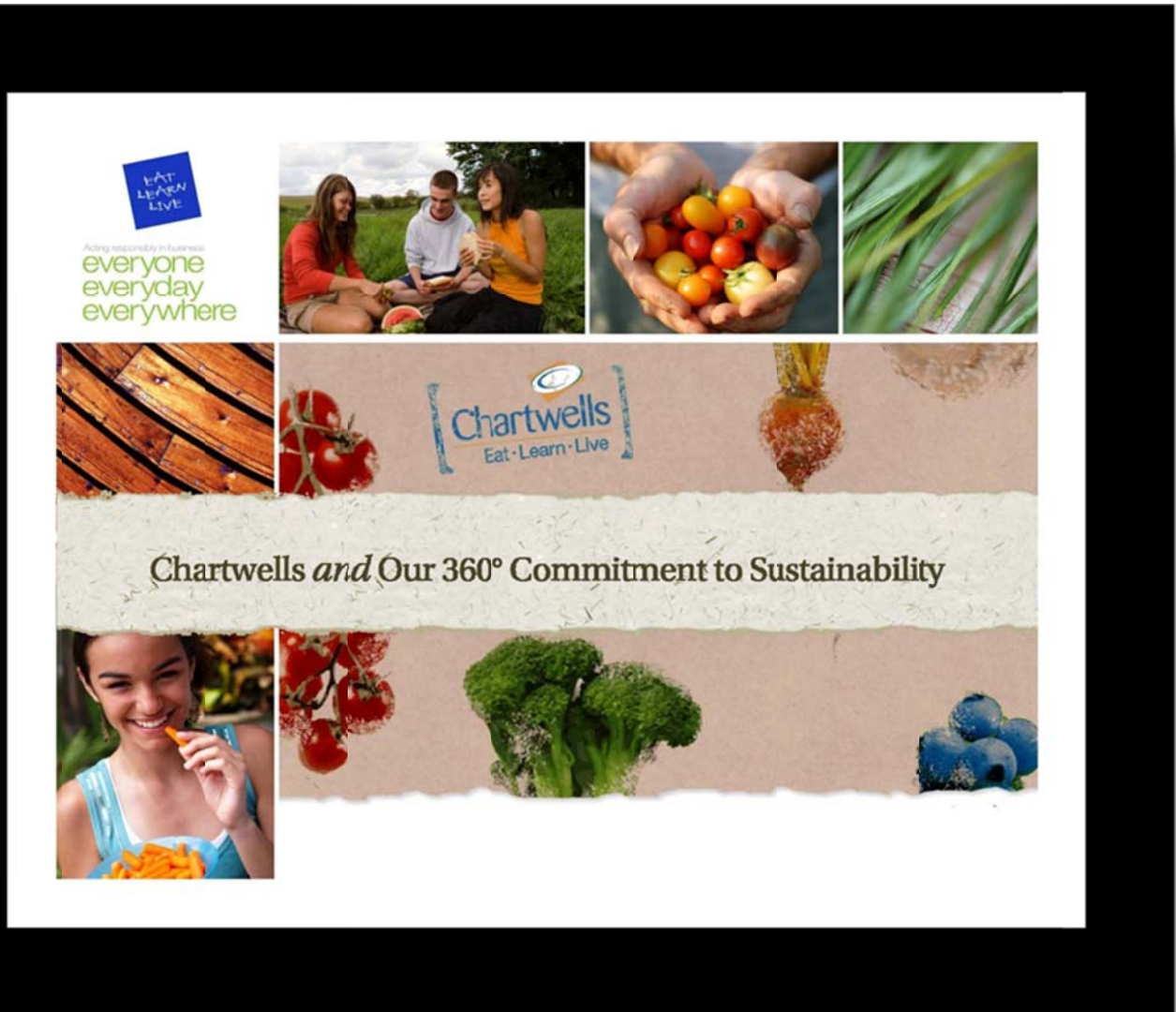
### *2.1 Short term goals and actions (1-5 years)*

<p><b>Goal 1:</b> Develop climate action plan to become green house gas neutral.</p>	<p><i>Action 1:</i> Complete campus green house gas inventory.  <i>Action 2:</i> Complete climate action plan.  <i>Action 3:</i> Produce annual green house gas reports.</p>
<p><b>Goal 2:</b> Implement climate action plans.</p>	<p><i>Action 1:</i> Engage campus community to implement mitigation strategies.</p>

## 3 Measurement Indicators

<p>Indicators</p>
<p>Green house gas emissions per GSF</p>

# 7: Dining Services



## 1. Vision – Dining Services

Dining Services will aim to provide students with better tasting, more nutritious food by developing relationships with farmers and suppliers to source locally produced organic and fair trade food products. Through the supply chain relationship, dining services will aim to encourage food producers and transporters to reduce the use of finite natural resources in particular fossil fuels and non-organic fertilizers. Dining services will create relationships with those suppliers who conform to the International Labor Organization standards of living wage, worker benefits and advancement opportunities, and worker health and safety.

## 2. Goals and Actions

For food to be classified as locally produced food it has to be produced within 250 miles of the institution (STARS 1.0). Fair Trade goods must be certified by TransFair USA, a 501(c)(3) nonprofit organizations, a member of [Fairtrade Labeling Organizations International \(FLO\)](#), and the only third-party certifier of Fair Trade products in the United States.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Source locally produced foods for campus dining operations.</p>	<p><i>Action 1:</i> Seek partnerships with local food producers in order to achieve a minimum 20% expenditure on local food in campus dining locations by 2011.  <i>Action 2:</i> Source fair trade foods when locally produced goods are not available.</p>
<p><b>Goal 2:</b> Source organically certified foods for campus dining operations.</p>	<p><i>Action 1:</i> At a minimum, 20% of food expenditures are directed to organic certified foods by 2011.</p>
<p><b>Goal 3:</b> Green catering operations by reducing waste and energy.</p>	<p><i>Action 1:</i> Develop policy to purchase Energy Star rated kitchen equipment where available.  <i>Action 2:</i> Establish waste minimization plan to eliminate the use of disposable crockery and cutlery at catered events.  <i>Action 3:</i> Eliminate use of bottled water at catered events held on campus.  <i>Action 4:</i> Employ only Energy Star rated vending machines on campus.</p>

## 2.2 Long term goals and actions (5 + years)

<p><b>Goal 1:</b> Develop sustainability guidelines to be adopted by catering service suppliers.</p>	<p><b>Action 1:</b> Develop and draft sustainability guidelines for catering service suppliers.</p>
<p><b>Goal 2:</b> Green catering operations by reducing waste and energy.</p>	<p><b>Action 1:</b> Establish waste minimization plan to achieve zero waste by 2040 for all operations including catered events.</p>

## 3. Measurement Indicators

Indicators
Percentage of total food expenditure dedicated to local food
Percentage of total food expenditure dedicated to organic food
Percentage of post consumer food composting

# 8: Land Management



## 1. Vision – Land Management

UNC Charlotte will work to strengthen its stewardship role of its land ensuring future generations are able to enjoy and learn from and value the campus’ natural environment. Grounds management shall be practiced where damaged grounds shall be subject to restorative policies, green space is conserved for its intrinsic value, non-organic inputs shall be eliminated and storm water runoff is subject to best available technology management practices.

## 2. Goals and Actions

The following actions and goals are designed to achieve the stated vision by encouraging and promoting sustainable practices that put an emphasis on the protection and conservation of the natural capital resources on campus.

### 2.1 Short term goals and actions (1-5 Years)

<p><b>Goal 1:</b> Manage campus grounds to promote sustainable practices.</p>	<p><i>Action 1:</i> Use native plants species grown on campus or locally sourced. (Kermath2008).  <i>Action 2:</i> Reduce use of pesticides and inorganic fertilizers.  <i>Action 3:</i> Set aside in perpetuity unbuildable land/habitat corridors of ecologically productive land and protect areas already set aside.  <i>Action 4:</i> Develop and implement low impact building exterior hard-scape management plan employing best management practices (LEED 2008) that include:</p> <ul style="list-style-type: none"> <li>○ Maintenance equipment</li> <li>○ Snow and ice removal</li> <li>○ Building exterior cleaning</li> <li>○ Sidewalk and pavement cleaning</li> <li>○ Integrated pest management</li> </ul> <p><i>Action 5:</i> Eliminate or reduce, except recreational and athletic fields, turf or monoculture areas for diverse ecologically protective areas (Kermath 2008).</p>
<p><b>Goal 2:</b> Employ water efficiency practices for all land management activities.</p>	<p><i>Action 1:</i> Use 100% of non potable water for irrigation.  <i>Action 2:</i> Utilize drought resistant plants and grasses.</p>
<p><b>Goal 3:</b> Increase and protect the existing campus tree canopy.</p>	<p><i>Action 1:</i> Identify, label and protect significant tree on campus.  <i>Action 2:</i> Clearly identify the importance of trees, shrubs and turf in the environment.</p>

## 2.2 Long term goals and actions (5 + years)

<p><b>Goal 1:</b> Implement a stormwater management plan to reduce storm water runoff.</p>	<p><i>Action 1:</i> Develop comprehensive campus wide stormwater management plan.</p>
<p><b>Goal 2:</b> Use 100% non potable water for irrigation by 2020.</p>	<p><i>Action 1:</i> Integrate stormwater storage BMPs into stormwater management plans.</p>
<p><b>Goal 3:</b> Preserve, restore and create green infrastructure on campus.</p>	<p><i>Action 1:</i> Preserve and maintain campus forested areas.  <i>Action 2:</i> Establish plan in conjunction with Mecklenburg County goals to restore and improve Toby Creek via stormwater management, stream and riparian corridor restoration, wetland restoration and stream bank restoration (Bio Habitats Report).  <i>Action 3:</i> Eliminate/control invasive species as identified in the Bio-habitats Ecological Assessment.  <i>Action 4:</i> Embrace campus master plan recommendations to implement green infrastructure approach at the university.</p>

## 3. Measurement Indicators

Indicators
<p>Percentage of total applied fertilizers and pesticides used meeting US Department of Agriculture organic certification standards.</p>
<p>Percentage of non potable water used for irrigation.</p>
<p>Number of Stormwater best management practices implemented.</p>

## 4. References

Kermath, B. (2008). Why go native? Campus landscaping for biodiversity and sustainability. In S. Walter (Ed.), *the Green Campus; Meeting the Challenge of Environmental Sustainability* (pp. 221-232). Alexandria, VA: APPA.

US Green Building Council. (2008). *LEED for Existing Buildings: Operations & Maintenance*. Retrieved Jan. 12, 2009, from <http://https://www.usgbc.org/ShowFile.aspx?DocumentID=3617>



# 9: Transport



## 1. Vision – Transport

The University of North Carolina at Charlotte shall aim to develop a sustainable transport system affecting the mobility of personnel, goods and wastes to and from the UNC Charlotte campus that incorporates the following principles:

- Reduces the dependence on fossil fuels
- Uses renewable energy sources
- Reduces emissions and wastes associated with transport
- Develop a transport system that does not negatively influence the ecosystem health of the plant and utilizes compounds that are easily broken down in nature
- Ensure that transport options are available to the widest community through affordability, accessibility and mobility
- Where all resources are used efficiently
- Where all materials are recycled

## 2. Goals and Actions

The above vision may be accomplished by employing the following long and short term goals and actions within the following key component areas

- Transportation demand management
- Transport planning
- Improving fleet efficiency
- Education

## 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Implement a transportation demand management plan to reduce the use of the single occupancy vehicle as the primary mode of transport.</p>	<p><i>Action 1:</i> UNC Charlotte shall seek to establish a comprehensive car pooling service, offering participants a guaranteed ride home.  <i>Action 2:</i> UNC Charlotte shall seek to expand the shuttle bus service to accommodate those students who live within a mile of campus.  <i>Action 3:</i> UNC Charlotte shall seek to expand the shuttle bus service to service the major retail centers off highways 29 and 49.  <i>Action 4:</i> UNC Charlotte shall seek to establish a bike program – offering subsidized or free bike rental and servicing infrastructure and improving visibility and functionality of bike racks.  <i>Action 5:</i> Work with CATS to offer free or reduced fare rides to UNC Charlotte faculty, staff and students.  <i>Action 6:</i> Provide maps showing public transport routes.</p>
<p><b>Goal 2:</b> Reduce demand for vehicular transport and promote alternative transport modes.</p>	<p><i>Action 1:</i> Continue and accelerate the North Carolina Petroleum Displacement Plan.  <i>Action 2:</i> UNC Charlotte should seek to establish a well marked and connected bike lane infrastructure on campus and connect to the Greenway.</p>
<p><b>Goal 3:</b> Improving fleet efficiency.</p>	<p><i>Action 1:</i> “Rightsize” fleet for intended purposes; use smaller and more efficient vehicles.  <i>Action 2:</i> Promote video and telephone conferencing.  <i>Action 3:</i> Enforce no idling program.</p>

## 2.2 Long term goals and actions (5 years+)

<p><b>Goal 1:</b> Reduce demand for vehicular transport.</p>	<p><i>Action 1:</i> High density development should be pursued on campus.  <i>Action 2:</i> Car pool and electric vehicle parking spaces shall get optimal locations.  <i>Action 3:</i> Renovate campus streets to slow traffic and increase pedestrian accommodations.  <i>Action 4:</i> Reduce availability of parking on campus by eliminating surface parking lots.</p>
<p><b>Goal 2:</b> Reduce use of fossil fuels for UNC Charlotte fleet, maintenance vehicles and contracted transportation services.</p>	<p><i>Action 1:</i> Charging stations shall be offered at all parking decks.  <i>Action 2:</i> Convert campus fleet to non fossil fuel technology.  <i>Action 3:</i> Offer flexible and telecommuting working options.  <i>Action 4:</i> Shuttle buses shall use alternatives fuels such as biodiesel.</p>

## 3. Measurement Indicators

The following indicators may be employed by UNC Charlotte to measure the progression of the University toward acting in a sustainable manner. The following indicators were selected and adapted from a list developed by Litman 2008.

Transport indicators
Percentage of ride share parking permits issued of overall parking permits
Ridership on campus bus routes
Pounds of CO <sub>2</sub> per passenger mile of campus motorized fleet
Percentage of alternative fuel vehicles in campus fleet
Number of charging plug in stations for non campus electric vehicles

## 4. References

Todd Litman 2008 Well Measured *Developing Indicators for Comprehensive and Sustainable Transport Planning* 9 July 2008 Victoria Transport Policy Institute  
<http://www.vtpi.org/wellmeas.pdf>

# 10: Resource Management



## 1. Vision - Resource Management

The University of North Carolina at Charlotte shall be a zero waste campus by 2040 where waste shall become a resource input into another system process, therefore moving from a linear system to a closed loop system.

## 2. Goals and Actions

UNC Charlotte has a well established recycling program. Opportunities exist to work with suppliers to reduce waste imported onto campus and to continue to move toward ensuring waste streams are seen and used a resource inputs into other processes.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Reduce waste imported onto campus.</p>	<p><i>Action 1:</i> Develop dialogue with campus suppliers, product manufactures to reduce waste associated with their products and services.  <i>Action 2:</i> Establish waste minimization goals in Materials Management contracts.</p>
<p><b>Goal 2:</b> Educate campus on best practices.</p>	<p><i>Action 1:</i> Expand on interdepartmental dialogue for discussions about waste management.  <i>Action 2:</i> Expand understanding of our environment and challenge students to reduce waste.</p>
<p><b>Goal 3:</b> Manage and reduce disposal of toxic waste.</p>	<p><i>Action 1:</i> Identify and prioritize toxicity of wastes from UNC Charlotte.  <i>Action 2:</i> Identified substitute products to reduce hazardous waste generation on campus.</p>

### 2.2 Long term goals and actions (5 years +)

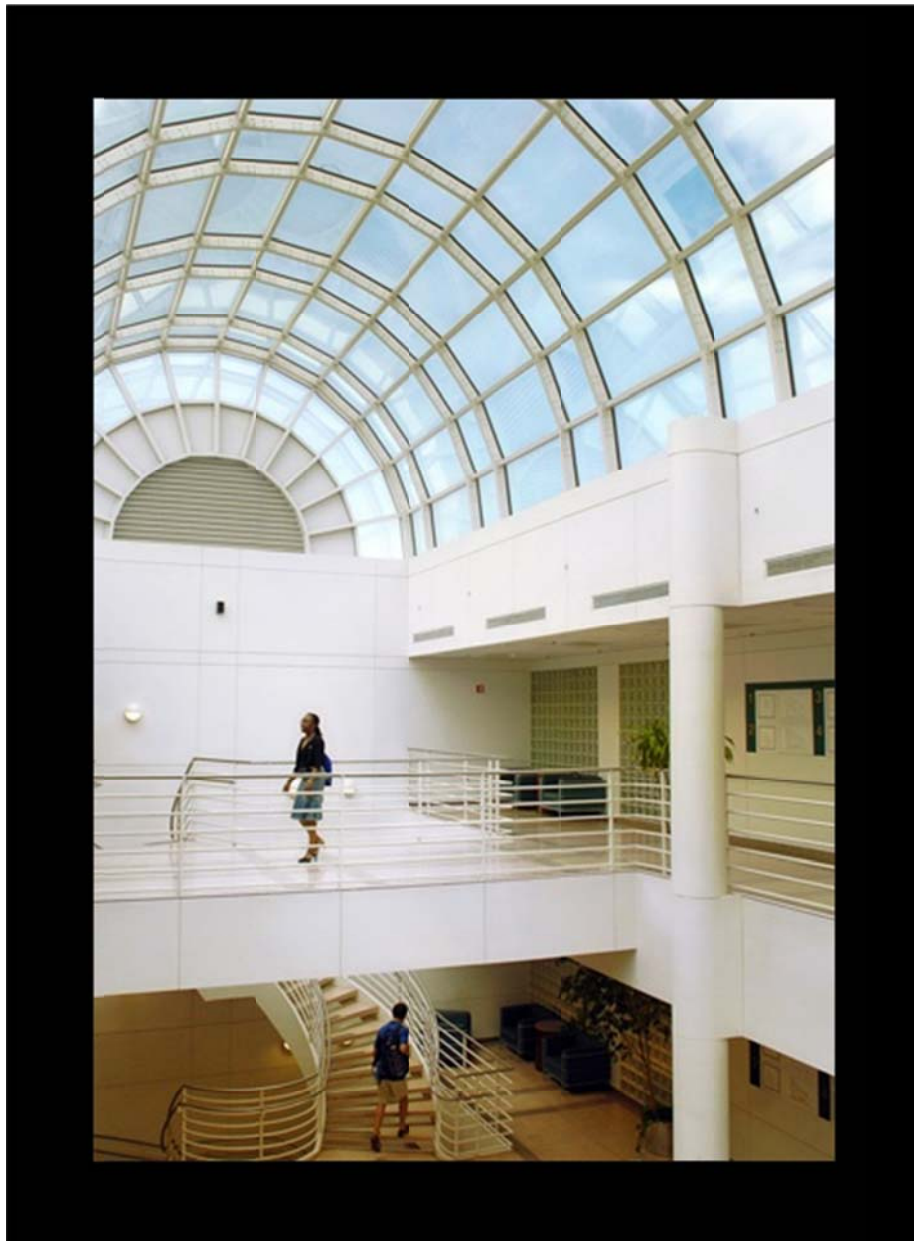
<p><b>Goal 1:</b> Establish waste minimization plan to achieve zero waste by 2040.</p>	<p><i>Action 1:</i> Establish University, NGO and Industry research partnerships to research closed loop opportunities.  <i>Action 2:</i> Establish “take back” programs in conjunction with suppliers.  <i>Action 3:</i> Reduce toxicity via implementing a toxicity substitution policy.  <i>Action 4:</i> Establish design for the environment and dematerialization criteria in sustainable purchasing policies.  <i>Action 5:</i> Establish product durability criteria where applicable in sustainable purchasing policies.</p>
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### 3. Measures Indicators

Resource Management Indicators
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Total waste production per GSF excluding construction and demolition waste. Recycled wastes per GSF
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# 11: Materials Management





## 1. Vision – Material Management

Recognizing that UNC Charlotte purchases large quantities of goods and services, the university shall leverage this purchasing position to protect the environment, enhance quality of life, and promote social justice. This will be achieved by protecting nature’s functions, using abundant as opposed to scarce chemicals, using resources efficiently and reducing reliance on fossil fuels. UNC Charlotte shall strive to source goods that are made up of compounds that can easily be broken down in nature and source natural resources that derived from sustainability managed ecological systems.

## 2. Goals and Actions

The following actions and goals are designed to achieve the stated vision by encouraging the university to develop a sustainability preferable purchasing program.

### 2.1 Short term goals and actions (1-5 years)

<p><b>Goal 1:</b> Implement a vendor code of conduct assessing suppliers on their environmental and ethical practices.</p>	<p><i>Action 1:</i> Collaborate with suppliers to develop and implement assessment procedure to track environmental and social performance of suppliers. <i>Action 2:</i> Highlight best practice suppliers to campus community.</p>
<p><b>Goal 2:</b> Develop Sustainable Purchasing Policy for all campus commodities.</p>	<p><i>Action 1:</i> Establish supplier partnerships based on sustainability goals. <i>Action 2:</i> Implement Energy Star and EPEAT purchasing policies for items such as computer, office and catering equipment. <i>Action 3:</i> Include environmental preferable purchasing procedures in design and construction guidelines.</p>

### 3. Measurement Indicators

Indicators
Percentage of suppliers and contractors assessed on their sustainability performance
Percentage of products designed for disassembly, reuse or recycling
Percentage of contracted service providers with an implemented of certified environmental management system
Percentage of Energy Star and EPEAT Products

## 12: Next Steps

This plan sets out recommended goals and actions to improve the sustainability performance of UNC Charlotte. This will be a long and exciting journey, one which needs to be embarked upon to position the University to face a future that will contain many uncertain and unpredictable environmental, social and economic challenges.

The next steps in the sustainability program is to implement the short term goals and actions outlined in this plan. The UNC Charlotte Sustainability Committee will play a pivotal role in this process by:

- Recommending short and long-term sustainability goals for UNC Charlotte.
- Recommending sustainability strategies to be adopted by the university.
- Recommending campus wide policies and guidelines on sustainability.
- Promote an interdisciplinary sustainability program across the teaching, research, outreach and operational functions of the university.
- Engage the campus community in sustainability dialogue.

All recommendations and proposals developed by the committee shall be subject to review by the Chancellor's Cabinet and approval by the Chancellor.

Implementing and managing practices for sustainable development involves tradeoffs. The aim is to ensure that these tradeoffs do not negatively affect the social, economic or environmental objectives of the decision made. There will be hard choices to be made, as well as costs associated with those choices. However, it is imperative that a long term view is taken regarding any programs implemented.

Implementing a sustainability program will enhance the reputation of UNC Charlotte, build and strengthen existing relationships, add to the exiting academic and research capabilities of the University.

We will be transparent regarding our successes and failures so we can learn and improve as an organization. This journey to sustainability will have to involve all of the campus community and our external partners to succeed.

A progress report will be published Fall of 2011.

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