



Sustainability at TNCC

Report of the Sustainability Task Force

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Executive Summary

This report is the annual update (March 2011 – March 2012) in response to the recommendations for improved sustainability contained in the Chancellor's report on sustainability which was produced and distributed September 2009. A copy of this report can be found at the following:

(http://www.vccs.edu/Portals/0/ContentAreas/Facilities/SUSTAINABILITY_Ecological_Commitment_to_Our_Future.pdf).

Colleges were asked to review the list of recommendations and identify those they will implement. To respond, TNCC conducted a campus-wide survey in January 2010. Faculty and staff were asked about sustainability and conservation practices and office and personal behaviors that reduce energy consumption, as well as sustainability-improving efforts that TNCC might implement. The results of that survey constitute the majority of this report.

This report addresses the four items listed under paragraph 1 by identifying the steps taken to implement each recommendation. Additionally, this report expands upon the recommendations listed under paragraph 2.

1. Task Force recommendations which TNCC will continue to implement and:

- #3. Identify gaps between existing college programs and industry needs and develop programs and scholarships to bridge these gaps.
- #4. Conform to LEED silver or Green Globes two-globe standards.
- #5. Develop a program for ensuring a healthy learning and work environment.
- #6. Establish (and regularly assess) an effective PM plan for HVAC, electrical, and other equipment to optimize energy efficiency.
- #8. Establish a sustainability committee.
- #9. Assess sustainability emphasis included in current procurement practices and identify areas for improvement.
- #10. Assess the use of new information technologies, such as virtual servers, digital imaging, electronic file sharing, and electronic signatures to find ways to further reduce energy consumption and paper waste.
- #11. Explore opportunities to engage community leaders in the development of an integrated sustainability program.

2. Task Force recommendations TNCC commits to addressing in the future:

- #1. Develop an environmental sustainability scholars program, and establish guidelines for modifying courses to include environmental sustainability components.

- #2. Provide annual funding specifically for professional development opportunities in sustainability.
- #7. Establish a variety of transportation and parking options and incentives to reduce fuel consumption and carbon emissions.

Responses by Recommendation

This report documents current and planned efforts that contribute to a more sustainable environment at TNCC. Efforts are framed by the recommendations identified in the Chancellor's report.

Sustainability has long been practiced at TNCC and is a consideration in college decision making processes. Thus, TNCC is already implementing some of the recommendations proposed in the Chancellor's report. Recommendations of the Chancellor's Task Force on Sustainability were divided into three categories: Academics and Workforce Development Services (WDS), Facilities, and Fiscal and Administrative Operations. Recommendations below are presented within this framework. Current and future activities are presented by recommendation, as are a list of actions the college intends to take to achieve (or to continue to achieve) the recommendation. This report reflects the steps taken to implement these recommendations.

Academics and Workforce Development

- #1. Develop an environmental sustainability scholars program, and establish guidelines for modifying courses to include environmental sustainability components.**

CURRENT:

TNCC's has begun offering courses related to environmental sustainability, such as ELE 176, BIO 107, BIO 270, and classes in hybrid automotive. Instructors could be willing to use this as a topic when giving assignments to their students; for example, ENG 112 instructors could provide environmental issues as possible topics for student essays.

FUTURE:

- Meet with the Curriculum Committee and the Vice President for Academic Affairs to create an environmental sustainability scholars program, where program requirements are fulfilled when 15 credit hours of approved environmental sustainability courses are completed. Upon successful completion of program requirements, students will earn a designation on their degree, diploma, or certificate and transcript.
- Encourage faculty members to infuse environmental sustainability content into courses and to create new courses that focus on environmental sustainability. When appropriate, award release time for curriculum development.

#2. Provide annual funding specifically for professional developmental opportunities in sustainability.

CURRENT:

Funds are available for professional development, and instructors are encouraged to seek opportunities for professional development, including sustainability.

FUTURE:

- Seek opportunities for professional development, such as faculty internships, at appropriate industry and community locations.
- Invite environmental industries to TNCC to present hands-on training opportunities for the faculty.
- Include environmental sustainability issues in the yearly CSSA Professional Development Day program.

#3. Identify gaps between existing college programs and industry needs and develop programs and scholarships to bridge these gaps.

CURRENT:

In September 2010, the Department of Energy Weatherization Training Center grant was awarded to the Hampton Roads-based Green Jobs Alliance (GJA) to establish a weatherization training pipeline with TNCC Workforce Development as a key partner. The pipeline program includes Work Keys assessments for the Governor's Career Readiness Certificate (and time in the Key Train tutorial lab as needed), and as of spring 2012 includes four non-credit courses with ENVR prefixes, Weatherization Basics (using Department of Energy curriculum), BPI Certified Weatherization Installer, Building Analyst Boot Camp (new in Feb 2012) and BPI Certified Building Analyst (home energy auditor), as well as certified OSHA-10 safety for construction. Challenge exams are available for experienced workers from the construction industry or local weatherization assistance programs to reduce their time from training to work. The pipeline supports the need for local governments to assess and evaluate low-income weatherization projects and for contractors to evaluate effectiveness of renovation or retrofitting for homeowners to qualify for energy incentive funding. In the first six quarters, the program has trained 238 participants. A team of four part-time staff in Workforce Development now handles all details of curriculum development, tracking of students, training and testing, logistics, and program compliance.

WDS also received in summer 2011 a small grant from the National Wildlife Federation to assist Engineering Technology and CAD Design students to research, design and install solar panels to power lights and battery-chargers in the motorcycle safety containers adjacent to the PWDC parking lot. The motorcycle safety program serves 1200-1300 participants annually who will see the small-scale solar application in use at TNCC.

TNCC offered ELE 176, Introduction to Alternative Energy Including Hybrid Systems, for spring 2012. This 3-credit class introduces students to alternative energy with an emphasis on solar photovoltaic systems, small wind turbines technology, the theory of PV technology, PV applications, solar energy terminology, system components, site analysis, PV system integration and PV system connections, and small wind turbine technology site analysis.

With VCCS special-funding, WDS will offer two tracks of Healthcare IT for electronic health records in Spring-Summer 2012, HLTH 4500 and 4505. These new systems offer significant reduction in paper and storage needed for maintaining accurate health records. This program information has been shared with TNCC's new Healthcare Professions Task Force.

TNCC offered a wetland biology class during the summer 2011 term.

FUTURE:

WDS will continue to seek grant funding for training that prepares workers for 'green' jobs. It will continue its efforts to be demand-responsive to the needs of business and industry, especially those that target 'green' jobs. Information will be shared across academic lines so that faculty can benefit from knowledge of the demands of the field.

ACTIONS:

- The Biology department is developing a Environmental Science class (BIO 107) to be offered Spring 2013 and a General Ecology (BIO 270) to be offered Fall 2013. Other courses are being developed.
- WDS is working with local weatherization assistance providers to ascertain employment openings for trained weatherization technicians and assessing need for incumbent worker training to upgrade skills and add industry certifications.
- WDS is working with the VCCS-led Virginia Weatherization Training Center, based at CVCC, to share resources with TCC and other colleges, and share experience to access new funding opportunities for sustainability of programs. TNCC and TCC are collaborating together to provide BPI-certified Weatherization Installer training for staff and participants in the Tidewater Builders' Academy in Virginia Beach in 2012. The newly-expanded Green Jobs Alliance Board is committed to pursuing grants and industry support for energy efficiency and renewable energy, including off-shore wind technology programs.

Facilities

#4. Conform to LEED silver or Green Globes two-globe standards.

CURRENT:

The master planning process adheres to the standards of the Governor's Executive Order 19 which requires conformity to LEED Silver or Green Globes two-globe standards.

TNCC's Hampton III Building was recently awarded a LEED Silver Renovation Certification. TNCC is the first college within the VCCS to accomplish this monumental feat. Some of the highlights achieved during our LEED Certified status include:

- 92% of construction debris was diverted from landfills and was reused.
- 35% of all new materials were recycled.
- 22% of all new materials were made and harvested regionally.
- 88% of wood is Forest Stewardship Council (FSC) certified.
- Energy costs were modeled to be 22% less than code-minimums.
- The Measurement and Verification Plan earned the project 3 extra points.

The project also achieved 2 pilot credits, going beyond the listed rating system. To achieve these, the team documented Volatile Organic Compounds (VOCs) content of most interior materials and demonstrated that 5% of materials used in the project are "Cradle to Cradle" certified.

The renovations of the Hampton III building exceed the LEED Silver Standards.

Hampton III includes 25 classrooms, a nursing lab, and office space for six separate office functions.

FUTURE:

All Capital Outlay projects will be designed and built to the LEED Silver Standards.

#5. Develop a program for ensuring a healthy learning and work environment.

CURRENT:

Ensuring a healthy learning and work environment is the responsibility of all departments. Plant Services has expanded the paper-only recycling effort into a single-stream program, which includes paper, cardboard, all plastic products, glass, and aluminum products. The hazard waste management program continues to ensure the removal of all hazardous waste.

TNCC has a contract with Shred-It for recycling paper products. This program started in August 2011 and now includes 33 bins in 23 offices on both campuses. The College recently received a Certificate of Environmental Accomplishment from Shred-It, acknowledging the recycling program and for saving 75 trees from destruction.

TNCC conducted a print management study and awarded a contract to ESI to install multi-functional networked printers which has been very successful to conserve equipment, paper and energy.

TNCC Physical Education instructors now serve as the agency coordinators for TNCC CommonHealth Program, a Commonwealth of Virginia program that promotes wellness in the workplace. Their knowledge and experience benefit employees who desire to improve and/or maintain their health and wellness. They have developed a "CommonHealth Advisory Committee" comprised of six faculty and three staff members with a focus on providing important information about Virginia's CommonHealth program to TNCC employees. Quarterly campaigns are held, and weekly emails are sent to employees, featuring various wellness topics and benefits offered through the program such as Weight Watchers, Quit for Life, and the Prenatal Program. TNCC's Safety Officer is responsible for ensuring that the college maintains a safe and healthy environment for its students and employees.

FUTURE:

TNCC is currently working toward a college intranet that will allow faculty and staff to access current information and college resources.

ACTIONS:

- Establish guidelines/recommendations that encourage use of an eco-friendly font that reduces ink production; print draft quality; print 2-sided or 2 pages per sheet, etc.
- Encourage more on-line courses, as appropriate.
- Consider alternative work schedules to include the feasibility of telecommuting. Telecommuting would mitigate traffic congestion and reduce emissions.
- Consider consolidating building use on weekends to reduce HVAC energy use.
- Encourage video and telephone conferencing, WebEx and webinar meetings, and electronic transmittals and communication in lieu of driving to meetings.
- Investigate the purchase and use of software that automatically powers down computers in off hours.
- Develop a 'green' web page that identifies 'green' practices, provides educational tips and best practices, and links to other relevant sustainability sites.
- Develop a program to measure recycling efforts college-wide to let all employees understand how this impacts the environment.

- Implement 150 thin client computing units for Math Lab Plus Emporium in Hampton III with a cost savings to the college of over \$80K.
- Implement a Virtual Desktop Solution allowing remote access to campus resources from any browser.

#6. Establish an effective preventative maintenance program PMP for building HVAC, electrical, and other equipment to optimize levels of energy efficiency.

CURRENT:

TNCC has a PMP for HVAC, electrical and other equipment. In addition TNCC is currently automating the PM tasks into a software program that creates a work order and assigns it to the appropriate staff function. We have also upgraded several of our HVAC systems to include energy efficient chillers, condensers, and controls systems. TNCC is committed to following the State Energy Standards for heating and cooling temperatures.

Plant Services staff have replaced the old faucets in Diggs, Griffin, Harrison, Hastings and Plant Services with energy efficient solar powered motion detectors.

TNCC is committed to preserving green space and the preservation of the natural environment by planting drought resistant plants, shrubs and trees. All irrigation systems are now programmed to come on at the most efficient time of day to save water. Every irrigation system also now has a moisture meter included so they do not come on if the ground is already moist.

FUTURE:

Continue to do preventive maintenance, automate the PMs, and enforce the State Energy Standards. Encourage maximizing use of natural lighting in occupied rooms and choosing fixtures for task lighting controlled by individual occupants. As resources allow, more bathroom fixtures will be updated to conserve water. Continue to put all exterior light fixtures on photo cells.

ACTIONS:

Continue to do preventive maintenance, automate PMP, and enforce the State Energy Standards.

- Where possible, continue to replace standard plumbing fixtures with waterless or low-flush fixtures, and consider proximity-sensitive faucets and automatic flush valves for water savings. This was recently done as part of the Hampton III Renovations.
- Continue to review and consider irrigation and water needs by planting native and adaptable species.
- Continue to upgrade offices and classrooms with energy efficient lighting and technology. The Welcome Center and 9 offices have been upgraded during the past year.

- Encourage the turning off of interior and exterior lights when not in use and install power strips that can be powered off to eliminate energy consumption when equipment has been turned off or is in stand-by mode.
- When replacing lighting, continue to put half of the lights on a separate switch so room will have full or half light as needed.

#7. Establish a variety of transportation and parking options and incentives to reduce fuel consumption and carbon emissions.

CURRENT:

There is a major local transit stop located on TNCC's Hampton campus which encourages and promotes the use of mass transit by students and employees.

TNCC recently completed the Hampton III renovation project. The building includes a shower for those who ride their bikes to work, as well as eight high energy efficient vehicle parking spaces next to the building. There are designated choice parking spots for high mileage vehicles.

TNCC recently purchased five new flex-fuel vehicles for the college owned vehicle fleet, further supporting the mission of the college. These vehicles are more efficient and produce fewer emissions than the vehicles they are replacing.

FUTURE:

TNCC will continue to investigate telecommuting and ride sharing options.

ACTIONS:

- Consider providing preferred parking, reduced fees, or other incentives to promote carpooling and ride-sharing programs for faculty, staff, and students.
- Investigate a shuttle service between the Hampton and Historic Triangle campuses, with staff sharing a ride with other staff scheduled to drive between campuses.
- Consider providing an online bulletin board for ride-share postings. Suggestions include a ride-share calendar on SharePoint, when made available, for faculty and staff to access possible ride-sharing between the two campuses.
- Consider providing preferred parking for low-emission vehicles and scooters.
- Install more bike racks installed on campus.
- Consider purchase of additional low-emitting vehicles for the College fleet.
- Revise TNCC's travel policy to recommend use of fleet vehicles when multiple staff attends a function off-campus.

Fiscal and Administrative Operations

#8. Establish a sustainability committee.

CURRENT:

TNCC established the Environmental Sustainability committee in August 2010 to support the Chancellor's Sustainability Task Force report. The committee consists of representatives from Information Technology, Library, Faculty, Administration, Plant Services, Workforce Development, Human Resources, Plant Services, and students. All members are keenly interested in environmental sustainability.

TNCC is a member of the Sustainability Education & Economic Development (SEED) Center.

FUTURE:

The committee will continue to identify, implement, and track relatively reasonable environmental sustainability measures for the TNCC campuses in compliance with the latest directives from the Governor. The Chancellor requires that progress be documented and reported annually to the President and then to the Chancellor.

The committee will continue the following:

- Investigate innovations in 'greening';
- Generate ideas to optimize resources;
- Suggest steps that might be taken to become more sustainable;
- Increase visibility of TNCC's sustainable practices in the broader community;
- Share best practices and links to resources via a sustainability link on the TNCC website.

Complete application to the Virginia Environmental Excellence Program (VEEP), through the Virginia Department of Environmental Quality.

ACTIONS:

- Document and report annually committee progress to the President and the Chancellor.
- Seek membership in the VEEP program of the Department of Environmental Quality.
- Encourage membership and involvement in regional and local 'greening' groups.
- Investigate the CEED program.

#9. Assess sustainability emphasis included in current procurement practices and identify areas for improvement.

CURRENT:

Procurement practices have been strong on sustainability in part due to the need to conserve resources. Finance and Information Technology have a contract with ESI which instituted a print management program, combining printing functions and also promotes savings by including service and supplies under one contract. Complete conversion to a paperless system, however, is limited by auditing requirements. The Learning Resources Department recently purchased eighteen (18) Kindle eBook reading devices. These devices can be checked out to anyone in the TNCC community, and are pre-loaded with approximately two dozen books. The use of these devices saves on shelf space, cuts down on the use of paper, and is very cost effective, as the cost of digital books is less than their paper counterpart.

FUTURE:

TNCC will continue to review procurement guidelines to increase sustainability in procurement practices such as specifying vendor requirements for diverting waste from landfills and incinerators, requiring recycling for construction waste, structured review of cost/benefit ratios for on-site or alternative energy sources, and encouraging 'green' requirements in RFPs and IFBs for auxiliary contacts. When possible, IFBs and RFPs for renovation/construction will include a recycling requirement.

The procurement office also will be encouraged to consider cooperative procurements and partnerships to reduce costs.

ACTIONS:

- Enforce guidelines for 'green' requirements in RFPs and IFBs for auxiliary contacts such as vending, food service, custodial and bookstore contracts.
- Enforce guidelines for general operations including buying recycled paper, avoiding disposable materials where possible when meals are served - choose biodegradable or recyclable materials.
- Encourage use of Google docs to share documents.
- When feasible/possible buy local.

#10. Assess the use of new information technologies, such as virtual servers, digital imaging, electronic file sharing, and electronic signatures to find ways to further reduce energy consumption and paper waste.

CURRENT:

TNCC implemented a print management system campus wide in the fall 2009 which replaced individual printers with networked printing capability. This standard is now operational in most offices in Hampton and Williamsburg.

The volume of TNCC publications traditionally provided in hardcopy has been reduced. The web and Blackboard have been used in lieu of hardcopy materials. The college schedule and the college catalog have been put online.

The administration is investing in additional Smartboards for classrooms to replace the chalk boards which caused unhealthy dust accumulation in the air and on the equipment and furniture.

A "pay for print" program for students has been implemented. This ensures students print only those copies needed for their classes and reduces paper waste.

SharePoint has been created to securely allow sharing of resources between divisions on and off campus

Server virtualization eliminates the need for excessive physical servers while allowing for many virtual servers and services.

Desktop virtualization allows remote access via any browser. Also replaces desktop imaging as profiles are stored on servers versus desktops.

FUTURE:

TNCC will continue to explore additional ways the academy and the administration can conserve resources.

ACTIONS:

The Vice President for Administration and Finance will work collaboratively to identify information technology purchases, short term and long term costs, anticipated savings, and the ramifications of these purchases.

#11. Explore opportunities to engage community leaders in the development of an integrated sustainability program.

CURRENT:

TNCC continues its partnership with the Hampton-based Green Jobs Alliance (GJA) to conduct energy efficiency programs (see also Goal #3). Other partners include the Peninsula Council for Workforce Development; Peninsula Worklink; The STOP Organization that manages the state weatherization funding for the City of Hampton and 15 localities on the Southside; Urban League of Hampton Roads; the Office of Human Affairs; Laborers International Union of North America; and the International Brotherhood of Electrical Workers. New GJA Board members include Old Dominion University, Newport News Shipbuilding, and Dominion Power.

TNCC also integrates programs that can support wind and solar installations such as the electrical specialization within the Electronics Technology program conducted with the International Brotherhood of Electrical Workers (IBEW) apprentice program.

FUTURE:

TNCC will continue to be involved in sustainability efforts at its campuses and will capitalize on opportunities to work with local governments and business and industry to consider the efficiencies of sustainability efforts like recycling or purchasing. TNCC will also seek strong speakers on sustainability and best practices.

All GJA community partners will be listed on weatherization training program materials and hands-on weatherization classes.

ACTIONS:

- Continue involvement in regional 'greening' initiatives and groups, such as GJA and Hampton Roads Green Building Council.
- Conduct weatherization training lab classes at community locations because TNCC does not have any lab space available for this type of training.
- Seek speakers on this topic for the TNCC community and beyond.
- Seek opportunities for industry to use TNCC as a test bed for its 'green' products.

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