



The Peninsula's Community College

Sustainability at Thomas Nelson
Report of the Sustainability Task Force

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Executive Summary

This report is the annual update (March 2015 – March 2016) 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_Compact_to_Our_Future.pdf.

Colleges were asked to review the list of recommendations and identify those they will implement. To respond, Thomas Nelson 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 Thomas Nelson might implement. The results of that survey constitute the majority of this report.

This report addresses the 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 Thomas Nelson 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 Thomas Nelson commits to addressing in the future:

- #1. Research the viability of 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 Thomas Nelson. Efforts are framed by the recommendations identified in the Chancellor's report.

Sustainability has long been practiced at Thomas Nelson and is a consideration in college decision making processes. Thus, Thomas Nelson 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 ACTION(S) 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:

- During the 2016 Faculty Colloquium on Excellence & Innovation, Peter Berquist, Geology instructor and committee member, presented "New Resources for Teaching About Carbon and Climate Change." This session introduced new educational resources focused on carbon and climate change that are appropriate for a variety of courses (not just geology and science) and provided students and instructors with multiple delivery and assessment styles.
- All computer science courses (CSC) are set up to be paperless. All course materials are provided and collected through Blackboard.
- Deborah Lichniak and students in Engineering Technology and Biology converted portions of the greenhouse on top of Hastings Hall to run on solar power.
- BIO 101 infuses concepts about sustainability throughout their curriculum. Examples include creating biofuels, fossil fuel consumption and atmospheric carbon dioxide concentrations, and how decreasing genetic diversity leads to species more susceptible to environmental change.
- The Automotive Technology Program collects and recycles all used engine oil and antifreeze with an outside vendor. Additionally, the program collects and recycles used batteries from vehicles and from Plant Services.

FUTURE:

- Offer BIO 270 General Ecology again.
- Continue to encourage faculty members to infuse environmental sustainability content into courses and to create new courses that focus on environmental sustainability.
- Add sustainability topics to the annual faculty colloquium.

- Install groundwater monitoring well on the Historic Triangle campus to be used by students in science courses, specifically Geology.
- ENE 120, Solar Power - Photovoltaic and Thermal, has been approved and is being offered in the Fall 2016 term. This 4- credit class studies the production and conversion of electrical energy from modular to grid power systems. The course covers the storage of energy, thermal solar capture, and storage for residential and commercial applications, as well as energy conversion and storage equipment based on size and efficiency.

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

CURRENT:

Funds were provided in the FY 2015-2016 budget for professional development, and faculty 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 Thomas Nelson to present hands-on training opportunities for the faculty.
- Continue partnership with College Support Staff Association (CSSA) to include environmental sustainability issues in their annual Professional Development Day program.
- Promote the availability of professional development funds among faculty members to incorporate sustainability within their curricula.

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

CURRENT:

- Workforce Development continues its interest in promoting energy-saving practices. The new Center for Building and Construction Trades located at the Hampton Goodwill Center has two model houses that allow workforce HVAC Technician students to practice insulating ductwork and installing energy-efficient HVAC units. Workforce Development's weatherization components were moved to the Center for Building & Construction Trades in Hampton to be used in conjunction with HVAC Technician and Facilities Maintenance Technician training programs. Additionally, each HVAC student will take the exam for the EPA 608 certification required for safe disposal of refrigerant materials.
- Two Motorcycle Safety containers continue to use solar power for interior lights and ventilation.

- New Dual Enrollment program in Mechatronics offered at the New Horizons Regional Education Center. Upon graduation from high school, these students would earn dual enrollment credit and Siemens certification for entry into high wage manufacturing jobs.
- Starting Spring 2016, students can enroll in GIS 295 Topics in Service Learning for GIS (Geographic Information System), in which they explore the application of geospatial technologies while participating in a service-learning mapping project for NASA at Wallops Island to delineate non-native invasive species and explore sea level rise on the campus of NASA Wallops Island. Students will explore the techniques of mapping such as GIS, Remote Sensing, GNSS/GPS, and Unmanned Aerial Systems (UAVs) to determine the location of non-native species and explore a method of determining the effect of sea level rise.

FUTURE:

- Workforce Development Services 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 disciplines so that faculty can benefit from knowledge of the demands of the field.

ACTION(S):

- The Green Jobs Alliance Board continues to pursue funds to support training for "green" jobs.
- The College has received a 3-year grant that would provide funding for Apartment Maintenance Technician and other industry-specific training.

Facilities**#4. Conform to VCCS standards.****CURRENT:**

Replacement of Harrison, Diggs, and Moore Halls on the Hampton campus remains on Thomas Nelson's new Six Year Capital Plan. This project is currently in the top 5 list for the Virginia Community College System. The 2016 General Assembly approved detailed planning funds for the replacement building for the Diggs/Moore/Harrison Hall.

FUTURE:

Adhere to the standards of the Virginia Environmental Excellence Program (VEEP), which encourages superior performance through environmental management systems and pollution prevention.

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

CURRENT:

- Thomas Nelson continues to reduce our environmental footprint through:
 - Adhering to environmental and Municipal Separate Storm Sewer System (MS4) (storm water) standards.
 - Approval of the College's Storm Water Master Plan by the Virginia Department of Environmental Quality.
 - Reducing the Total Maximum Daily Load (TMDL) by 5% in 2015 in compliance with the Chesapeake Bay Act. The next goal is to reduce our TMDL 30% by 2020.
- Staff and faculty regularly receive the electronic CommonHealth newsletter, promoting a healthy lifestyle. A link to the CommonHealth site is available through the Human Resources homepage on the College's website.
- New ergonomic chairs have been purchased for use by staff and faculty.
- The Wellness Center is available for use by staff and faculty, with accessible hours clearly posted.
- Thomas Nelson continues in its efforts to recycle paper, but changed vendor from Shred-It to Stealth Shredding, a micro-SWAM vendor. Between April 2015 and March 2016, Thomas Nelson saved 394 trees from destruction. Forty thousand, three hundred (40,300) pounds of material (equal to 20.15 tons processed) were collected, shredded onsite, and recycled locally. In addition to the number of trees saved, between July 1, 2015, and March 14, 2016, the College has:
 - Saved 141,050 gallons of water;
 - Saved 82,615 Kilowatts of energy;
 - Kept 1,209 pounds of pollutants out of the atmosphere; and
 - Saved 101 cubic yards of landfill.

FUTURE:

Continue to ensure a healthy learning and work environment.

ACTION(S):

- Encourage use of an eco-friendly font that reduces ink production; print draft quality; print 2-sided or 2 pages per sheet, etc.
- Consider alternative work schedules to include the feasibility of telecommuting. Telecommuting would mitigate traffic congestion and reduce emissions.
- Investigate the purchase and use of software that automatically powers down computers in off hours.

#6. Maintain effective preventative programs (PMP) for facilities and grounds to optimize levels of energy efficiency.

CURRENT:

- Thomas Nelson has upgraded all lighting in classrooms at the Historic Triangle campus.
- Bathroom fixtures have been replaced with more water efficient units which turn off automatically, thus conserving water.
- Automatic hand dryers were installed, reducing the cost expense of paper products as well as paper waste.

Thomas Nelson continues in its ongoing commitment to preserve green space and the natural environment.

FUTURE:

- Continue to do preventive maintenance 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 cell controlled switches.
- Test feasibility of replacing existing parking light fixtures with solar-powered LED lights.
- Bring in experts from SchoolDude to review and fine tune existing PMP, and to ensure standardization of protocols at both campuses.
- Replace light sensors to ensure lights are turned off when the room is unoccupied.

ACTION(S):

- Continue to do preventive maintenance.
- Continue to enforce the State Energy Standards.
- 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.
- Communicate by regular emails to encourage 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:

Thomas Nelson continues to encourage faculty and staff to ride-share when taking a fleet vehicle between campuses and for travel to conferences.

Thomas Nelson's travel policy was amended to recommend use of fleet vehicles when multiple staff attend functions off-campus.

FUTURE:

Survey other VCCS colleges concerning their efforts and initiatives regarding ride-share and telecommuting options.

ACTION(S):

- 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 expanding the preferred parking spots for low-emission vehicles and scooters.
- Install more bike racks on campus.
- Continue investigating the purchase of low-emitting vehicles for the College fleet.

Fiscal and Administrative Operations

#8. Maintain a sustainability committee.

CURRENT:

The committee is responsible for recommending sustainability efforts for Thomas Nelson Community College, beginning with recommendations from the report prepared the previous Spring. The committee meets a minimum of five times during the academic year (twice during the Fall and three times in the Spring). The members review the Sustainability Committee Report of the previous spring, prioritize its recommendations, and identify items to be implemented in the coming year. In most cases, implementation will require the involvement of several departments. A report documenting environmental sustainability efforts taken in the current year and new recommendations proposed for the future is to be prepared and submitted to the Vice President for Finance and Administration and to the President. This report is also to be submitted to the Chancellor in support of the President's annual evaluation. It is due to the Virginia Community College System by May 15th of each year, and its contents become an action plan for the subsequent year.

FUTURE:

The committee will continue to identify, implement, and track reasonable environmental sustainability measures for the Thomas Nelson 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 Thomas Nelson's sustainable practices in the broader community
- Share best practices and links to resources

ACTION(S):

- Document and report annually committee progress to the President and the Chancellor.
- Encourage membership and involvement in regional and local 'greening' groups.

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

CURRENT:

Procurement practices continue to be strong on sustainability in part due to the need to conserve resources.

The procurement office considers cooperative procurements and partnerships to reduce costs. There is an increased use in paying via credit cards, which precludes the need to print and mail checks.

Thomas Nelson has expanded the inclusion of electronic textbooks into its curriculum. For the Academic Year 2014-2015, four (4) courses (five [5] sections) offered students the opportunity to use etextbooks. Based on purchase or rental of new, used or digital textbooks over the purchase of new textbooks resulted in an average 33% savings; total dollar savings amounted to \$45,046.25.

Thomas Nelson has expanded the use of etextbooks in Academic Year 2016-2017. There are 45 classes, with over 130 sections, that offer students the option of using etextbooks. Both faculty and students are being encouraged to go paperless.

For the Spring 2016 term, Thomas Nelson offered the following courses that do not require the purchase of a textbook. This program is part of a new pilot program spearheaded by Virginia's Community Colleges to reduce instructional costs for students. J. Sargeant Reynolds and John Tyler Community Colleges are also participating in the project. The Thomas Nelson courses are:

- CST 100: Principles of Public Speaking
- CHM 1: Chemistry
- CHM 101: General Chemistry I
- ECO 202: Principles of Microeconomics
- ENF 3: Preparing for College English 111
- ENG 111: College Composition I
- ENG 210: Advanced Composition
- ENG 242: Survey of American Literature II
- HIS 121-122: United States History I-II
- ITE 119: Information Literacy
- MTH 158: College Algebra
- MTH 163: Precalculus I

FUTURE:

Thomas Nelson will continue to expand the use of e textbooks in Academic Year 2016-2017.

ACTION(S):

- Continue to enforce guidelines for 'green' requirements in RFPs and IFBs for auxiliary contacts such as vending, food service, custodial and bookstore contracts.
- Continue to enforce guidelines for general operations including buying recycled paper, avoiding disposable materials where possible when meals are served - choose biodegradable or recyclable materials.
- Encourage the use of Google Docs or OneDrive to share documents to reduce printed materials.
- 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:

- Thomas Nelson continues to add distance-learning (virtual) and hybrid classes. Participation in these classes continue to grow.

Online Class Sections							
Term	Distance		Hybrid		Traditional		Total
	Number	%	Number	%	Number	%	
Fall 2013	275	18.6%	61	4.1%	1,143	77.3%	1,479
Fall 2014	285	20.0%	62	4.3%	1,081	75.7%	1,428
Fall 2015	292	20.4%	71	5.0%	1,066	74.6%	1,429
Spring 2013	259	18.2%	76	5.3%	1,090	76.5%	1,425
Spring 2014	256	18.2%	75	5.3%	1,078	76.5%	1,409
Spring 2015	270	19.7%	80	5.8%	1,020	74.5%	1,370
Summer 2013	180	34.4%	30	5.7%	313	59.8%	523
Summer 2014	189	37.2%	33	6.5%	286	56.3%	508
Summer 2015	211	42.5%	35	7.0%	261	50.5%	497

Online Enrollments							
Term	Distance		Hybrid		Traditional		Total
	Number	%	Number	%	Number	%	
Fall 2013	5,969	19.0%	1,134	3.6%	24,297	77.4%	31,400
Fall 2014	5,940	19.8%	1,040	3.5%	23,057	76.8%	30,037
Fall 2015	6,030	21.3%	1,084	3.8%	21,194	74.9%	28,308
Spring 2013	5,970	20.2%	1,256	4.2%	22,363	75.6%	29,589
Spring 2014	5,941	20.1%	1,241	4.2%	22,427	75.7%	29,609
Spring 2015	5,880	21.7%	1,240	4.6%	19,947	73.7%	27,067
Summer 2013	3,542	39.5%	438	4.9%	4,978	55.6%	8,958
Summer 2014	3,489	43.5%	373	4.6%	4,167	51.9%	8,029
Summer 2015	3,887	48.5%	461	5.8%	3,667	45.8%	8,015

- During the 2016 Faculty Colloquium a session on “Virtual Reality in the Classroom” was presented. This session provided information to faculty on what virtual reality is and how to explore opportunities to actively engage their students by using virtual reality in the classroom.
- During the Fall 2015 term, two sections of Historical Geology (GOL 106) were offered online. Approximately 75 students enrolled this academic year. This course is the second part of GOL 105, Physical Geology, which has been offered online for several years. GOL 106 focuses on exploring the geologic history of the Earth through

evidence. The online course allows students to research lifeforms and landforms in Earth's history that interest them the most.

FUTURE:

- Continue to establish more distance-learning classes.
- Continue to explore additional ways the academy and the administration can conserve resources.
- The Director of Learning Resources has been in discussions with all Division Deans, the Vice Presidents of Academic Affairs and the Vice President of Finance and Administration concerning feasibility and advantages of expanding WEPA beyond Learning Resources. These discussions are ongoing.
- All student historical paper documentation will be stored in Edoma.
- The goal of file management is to manage and integrate content data access with new trends in social media web based application software to access documents and files on and off campus.

ACTION(S):

- The Vice President for Administration and Finance will continue to work collaboratively to identify information technology purchases, short term and long term costs, anticipated savings, and the ramifications of these purchases.
- Expand WEPA beyond the Learning Resources Centers, including the Historic Triangle campus. Sell WEPA pre-loaded print cards through the campus bookstores for students who do not have credit cards.
- Continue training members of the Thomas Nelson community to develop their own sites within SharePoint and become proficient in managing applicable content.

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

The Thomas Nelson Science Program hosts public lectures each semester, inviting scientists to provide our students with a better understanding of careers in science and the impact of these careers on environmental sustainability, natural resource management, and energy resources. To date, invited lecturers include scientists from local environmental consulting companies, Exxon-Mobile, NASA, and local and state government agencies.

FUTURE:

Thomas Nelson 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. Thomas Nelson will also seek strong speakers on sustainability and best practices for college events.

ACTION(S):

- Continue involvement in regional 'greening' initiatives and groups.
- Continue to seek speakers on energy efficiency for the Thomas Nelson community.
- Seek opportunities for industry to use Thomas Nelson as a test bed for its sustainable products and practices.