

VIRGINIA TECH CLIMATE ACTION COMMITMENT AND SUSTAINABILITY PLAN "STATUS REPORT"

Prospective Actions / Measures - Immediate Phase (2009 - 2012)

Reference: <http://www.facilities.vt.edu/sustainability/sustPlan.pdf>
 Prepared by the Office of Energy and Sustainability: 540-231-5184

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 Changes are shown in Red Type

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Administrative Structure and Governance

Action / Measure:	Description / Rationale:	Status:	Contact Information:
Establish a University Office of Sustainability	Responds to the need for continuous cross-university discussion and implementation of sustainability plan, especially behavioral elements	Established June 2009 with location in the Facilities Services Department. Susequently renamed the Office of Energy and Sustainability (OES). The office consists of the Energy and Sustainability Manager, the Sustainability Program Manager, the Campus Sustainability Planner, and a Graduate Assistant. Office reports to the Chief of Staff.	Fred Selby Energy and Sustainability Manager 231-6348, selby@vt.edu
Establish a Sustainable Development Coordinator in Outreach & International Affairs	Demonstrates university commitment to VTCACSP and University Plan for International Program	A Sustainability Development Coordinator has not been identified but John Randolph is assisting the provost with sustainability-related academic programs including outreach and engagement. See also the next item below.	Dr. John Randolph Professor, Urban Affairs & Planning, School of Public & International Affairs 231-7714 energy@vt.edu
Establish a Senior Fellow or comparable position to coordinate and develop research, instruction, & outreach sustainability programs	Focused position to take advantage of funding opportunities in sustainability research, outreach, instruction	In May 2009, the Provost asked John Randolph to assist him in advancing the university's academic programs related to sustainability. Randolph has established an ad hoc committee across the eight academic colleges, and formed five work groups related to implementation. The group is addressing undergraduate instruction first, then will turn to graduate instruction and finally to research and outreach. The initiative has a three year timeframe. One initiative is the "College Survey of Academic Programs on Sustainability." The survey's intent is to inventory all college's sustainability academic degrees and programs; to characterize their sustainability focus or brand; to capture ongoing collaboration, integration, and innovative teaching and learning; and to address college sustainability aspirations. The survey was distributed on December 15, 2009, and all of the colleges have responded. A full report with recommendations will be completed in spring 2011 .	Dr. John Randolph Professor, Urban Affairs & Planning, School of Public & International Affairs 231-7714 energy@vt.edu

Establish sustainability internship program in Office of Sustainability	Engages students in campus sustainability enterprise	Facilities Services has established a student sustainability internship program. During the spring 2010 semester, 10 undergraduate students served as part time, unpaid interns, and worked on 4 different projects. There was one unpaid intern during the fall 2010 semester and plans are being developed to expand the program for the spring 2011 semester. It is anticipated that there will be 3-4 project groups.	Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Monitoring program to assess progress toward VTCAC goals	Monitoring energy & emissions to evaluate plan implementation	The Office of Energy and Sustainability has created a VTCAC Status Report spreadsheet. The goal is to have the report updated quarterly and posted on the Office of Energy and Sustainability website: www.facilities.vt.edu/sustainability	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Virginia Tech becomes active in the Association for the Advancement of Sustainability in Higher Education (AASHE)	To become part of the sustainable university movement	AASHE is the nationally recognized professional sustainability organization. Virginia Tech established membership in June 2008 and renews its membership annually. Virginia Tech is a Charter Participant in the AASHE STARS (Sustainability Tracking, Assessment, and Rating System) Program.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Improve Virginia Tech's overall rating on the Sustainable Endowments Institute's "Campus Sustainability Report Card" to an "A-" in 3 years	Provides realistic university-wide goal	The Sustainable Endowments Institute (SEI) awarded Virginia Tech an overall "B+" rating on their "College Sustainable Report Card 2011." This marks the third consecutive year that our university's overall rating has increased (C- in 2008, B- in 2009, B in 2010). 322 colleges and universities in the United States and Canada participated this year. SEI used four surveys to obtain data which included: a campus survey, a dining survey, an endowment survey, and a student survey. Responses to those surveys were used to determine ratings in nine separate categories. Virginia Tech received an "A" rating for six of the nine categories to include: Administration, Climate Change & Energy, Green Building, Student Involvement, Transportation, and Investment Priorities. The Food and Recycling category had significant gains this year and received a "B" rating. All six "campus operations" categories received an "A" or "B" rating which means Virginia Tech continues to be recognized as a "Campus Sustainability Leader." The Virginia Tech one-page profile is shown at the following link: http://www.greenreportcard.org/report-card-2011/schools/virginia-polytechnic-institute-and-state-univ	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Establish a student Green Fee	Student support is strong and revenue would offset budget reductions	As an alternative to a student green fee, the Office of Budget and Financial Planning has established a pilot program to advance sustainability initiatives from recognized student organizations. The "Student Organization Sustainability Initiatives (Green RFP) Program" utilizes the university budget call format. Projects proposed must support the Virginia Tech Climate Action Commitment and Sustainability Plan. The specific process and timelines were developed in coordination with the Office of Energy and Sustainability and the Facilities Services Department. The pilot program was launched in August 2010 at the beginning of Academic Year 2010-2011. Student organizations submitted a total of eight RFPs. The Energy and Sustainability Committee reviewed and prioritized the projects, and the results were presented to the Office of Budget and Financial Planning for review and approval consideration at the end of October 2010.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Establish a Green Development Fund for campus sustainability and other endowment funds for academic sustainability programs	Dedicated funds for donors to support sustainability programs and investment in campus efficiency	Discussions with University Development representatives continue and appear promising. The Office of Energy and Sustainability will prepare a draft proposal for review this winter.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu

Facilities Infrastructure

Action / Measure:	Description / Rationale:	Status:	Contact Information:
Complete Upgrades to Power Plant.	1. Install new low NO(x) burners in Boilers 8, 9, 10.	Completed and certified November 2008.	Byron Nichols Power Plant Supervisor 231-2073 bnichols@vt.edu
	2. Installation of condenser at turbine exhaust.	Completed and in service Spring 2008.	Byron Nichols Power Plant Supervisor 231-2073 bnichols@vt.edu
	3. Installation of steam attemperators at Power Plant.	Completed and in service November 2009.	Byron Nichols Power Plant Supervisor 231-2073 bnichols@vt.edu
	4. Application of Emisshield high emissivity coatings to boiler tubes and refractory for a potential ~5% improvement in boiler efficiency.	Implementation plan/status: (1) Coat selected "test areas" in existing #7 (coal-fired) boiler during 1st half of FY11 COMPLETE ; (2) Run #7 for a full heating season, monitor, and conclude with a full assessment sometime during FY11 - IN PROGRESS ; (3) Determine whether to proceed further with one or both coal boilers	Fred Selby Energy and Sustainability Manager 231-6348, selby@vt.edu
Complete Upgrades to Steam Distribution.	A \$28 million capital project to upgrade the university's aging heat production and distribution infrastructure.	Upgraded three boilers at the Power Plant with modern, energy efficient controls and burners. Existing steam and condensate return distribution lines upgraded with better insulation and operate more efficiently. A new steam-driven power generator will not be installed in 2010.	Byron Nichols Power Plant Supervisor 231-2073 bnichols@vt.edu
Increase steam plant electric generating capacity	Extend current projects to increase on-campus electricity generation	Project is currently on hold.	Byron Nichols Power Plant Supervisor 231-2073 bnichols@vt.edu

<p>Develop campus demand side and load management program</p>	<p>Integrated plan for building and electricity efficiency based on results of ESCO program</p>	<p><u>ESCO Program:</u> ESCO Technical Audit Phase is complete for six buildings (Central Steam Plant, Cassell Coliseum, Detrick Hall, Pritchard Hall, McBryde Hall, and Hahn Hall). Draft compilation of final slate of energy conservation measures to be adopted completed, totaling \$8.7MM cost, with projected annual savings \$0.83MM for a 10.5-year simple payback; presentation made to VT Budget Office on September 16, 2010, with a follow-up working meeting scheduled before the end of the 2010 fall semester.</p> <p><u>Demand Management:</u> (1) VT successfully participated in the 2010 Pennsylvania/Jersey/Maryland (PJM electrical grid) Summer Capacity Demand Response Interruptible Load Reduction (ILR) Program with a 3MW load reduction commitment for a \$162k benefit in FY11 (initial payment received); planning for summer 2011 increased participation (tentatively 6 MW commitment) underway; (2) Development of a comprehensive plan to reduce AEP monthly summer 2011 demand through daily peak period HVAC cutbacks is underway with demand reductions centered on HVAC S/D's of unoccupied areas, and summer session class schedules outside of peak demand periods and in fewer/consolidated number of buildings; (3) VT enrolled for participation in PJM Economic Demand Response program effective 7/1; new Siemens/EnergyConnect interface currently capturing VTES baseline demand data COMPLETE; peak demand strategies involving HVAC and plug load reductions underway.</p>	<p>John Beach Director of Strategic Initiatives 231-9906 jbeach@vt.edu</p> <p>Fred Selby Energy and Sustainability Manager 231-6348, selby@vt.edu</p>
<p>Reduce purchased electricity by 10% from 2008 by 2012</p>	<p>By increasing efficiency, reducing waste, and increasing on-campus generation.</p>	<p>The reduction of purchased electricity is possible utilizing the 2008 year as a benchmark time period and factoring out the new facilities installed between 2008 and 2012. Higher efficiency lighting, HVAC shutdowns at night, and an overall awareness of the need to conserve energy by faculty, staff, and students will help accomplish this goal. <u>Specific activities include:</u> (1) conducting a campus-wide fume hood audit; (2) developing a plug load reduction plan; (3) implementing awareness programs to share monthly electricity usage with building owners/occupants via posters with graphs, energy reduction tips, etc., and a campus-wide PR campaign to highlight previous energy reduction successes and need for continuing reductions.</p>	<p>Fred Selby Energy and Sustainability Manager 231-6348 selby@vt.edu</p>

<p>“Smart grid” plan and interconnection policies for on-site generators</p>	<p>Accommodate interconnection of on-site generators</p>	<p>(1) Energy monitoring systems integration - Siemens is currently developing an interface between other campus energy monitoring systems and their Building Automation System (Ph. 1 - VTES, nearly complete; Ph. 2 - Central Chiller Plant; Ph. 3 Central Powerhouse; Ph. 4 - Misc. Others), which will help facilitate coordination and optimization of campus utilities relative to time-of-day electricity pricing. Existing Siemens Digital Electricity Monitors and existing steam, chilled water, condensate, and water energy meters will be able to be displayed on a common platform. (2) New Parking Garage Solar Photovoltaics (PV) - Funding approval for ~124 kWdc (~148,000 kWh/year) Solar PV was announced on Earth Day (4/22/10); Ph. 1 system will cover ~12,440 square feet (~14% of the top deck).</p>	<p>Fred Selby Energy and Sustainability Manager 231-6348 selby@vt.edu</p>
<p>Complete upgrades to central chilled water system</p>	<p>Study of campus wide use of chilled water has been completed. This aims to maximize existing capacity and efficiency. This project will also assess potential for retrofitting existing R-11 chillers with more modern and environmentally friendly alternatives.</p>	<p>Chilled Water Infrastructure Master Plan Study completed July 2009. Facilities Services is evaluating implementation strategies and funding opportunities for system upgrades and improvements. Current focus priority is facilitating an extended central district chilled water loop to new Academic and Student Affairs and Performing Arts Center buildings.</p>	<p>Fred Selby Energy and Sustainability Manager 231-6348 selby@vt.edu</p>
<p>Additional Chiller Plant and Distribution Upgrades</p>	<p>Campus chilled water study has identified configuration of future system. Study recommends several smaller plants located near peak demand centers.</p>	<p>Design of new Southwest Chiller Plant is underway. Construction Manager at-Risk has been selected. Request for Construction funding has been submitted to the state. Anticipate construction to begin once construction funding is appropriated by the state.</p>	<p>Patrick Hilt Capital Project Manager 231-7210 philt@vt.edu</p>

<p>The Virginia Tech Climate Action Commitment Resolution item #6 states "Virginia Tech will pursue LEED Silver certification or better for all new buildings and major renovations</p>	<p>Governor's Executive Order 19 (2010) requires LEED Silver certification for all new state buildings. Virginia Tech can exceed minimum state energy standards.</p>	<p>The University has a total of 12 LEED registered projects with the US Green Building Council. The Henderson Hall Renovation and Theatre 101 Addition project was completed in fall 2009 and received LEED "Gold" certification on February 5, 2010. The Addition to the Football Locker Room project was completed in fall 2010 and documentation has been sent to USGBC for certification determination. Five LEED registered projects are under construction and five are in design. Specific projects are listed below in gross square feet (GSF).</p> <p>a. Recently completed (total of 77,250 GSF):</p> <ol style="list-style-type: none"> 1. Henderson Hall Renovation and Theatre 101 Addition (LEED Gold). 2. Addition to the Football Locker Room (38,500 GSF). <p>b. Under construction (total of 543,355 GSF):</p> <ol style="list-style-type: none"> 1. Institute for Critical Tech & Applied Sciences- II (42,000 GSF). 2. Renovate Ambler Johnston Residence Hall (272,000 GSF). 3. Visitors and Undergraduate Admissions CTR (18,155 GSF). 4. Academic & Student Affairs Bldg (91,200 GSF). 5. Center for the Arts (120,000 GSF). <p>c. Under design (total of 422,00 GSF):</p> <ol style="list-style-type: none"> 1. Virginia Bioinformatics Institute Add (50,000 GSF). 2. Signature Engineering Bldg (160,000 GSF). 3. Human & Ag Biosciences Bldg (92,000 GSF). 4. Renovate Davidson Hall Chemistry Bldg (50,000 GSF). 5. Myers Lawson School of Construction Phases II & III (70,000 GSF). <p>http://www.pdc.facilities.vt.edu/mediawiki/index.php/Main_Page</p>	<p>David Dent Associate Director University Planning, Design, & Construction 231-9326 ddent@vt.edu</p>
<p>Require 35% improvement of energy performance over ASHRAE 90.1-2004 standards.</p>	<p>This exceeds new state standard of 30%, provides 8 LEED-NC 2.2 or 10 LEED-NC 2009 points.</p>	<p>The VTCAC Resolution item #6 states VT will exceed ASHRAE 90.1 2004 energy performance standards by 35% (ASHRAE 90.1 2007 by 30%) for all new buildings and major renovations.</p>	<p>David Dent Associate Director University Planning, Design, & Construction 231-9326 ddent@vt.edu</p>
<p>Complete the installation of Occupancy Sensors.</p>	<p>Installation of occupancy sensors completed in 152 general assignment classrooms.</p>	<p>Completed the installation in 146 classrooms in June 2008. No other specific plans for additional installation at this time.</p>	<p>Kim Briele Electrical Engineer Senior Utility and Building Systems 231-0230 sbriele@vt.edu</p>
<p>Complete relamping of buildings.</p>	<p>Relamping completed in 36 buildings totaling 3 million ft². Relamping projects scheduled in another four buildings.</p>	<p>Hancock Hall retrofit was completed in fall of 2008. Projects in Derring and Fralin Halls are on hold due to unavailability of funds. The Sterrett Facilities Center conversions are completed as spaces are renovated.</p>	<p>Kim Briele Electrical Engineer Senior Utility and Building Systems 231-0230 sbriele@vt.edu</p>
<p>Complete relamping of buildings.</p>	<p>Relamping another 21 bldgs totaling 1 mill. ft² requires replacement of fixtures.</p>	<p>Retrofit of lighting in these E&G facilities is addressed as spaces are renovated. There are no specific projects currently planned to address these needs on a large scale basis. Projects to retrofit/replace fixtures in Engel and Roberson Halls were completed in spring 2010.</p>	<p>Kim Briele, Electrical Engineer Senior, Utility and Building Systems, 231-0230, sbriele@vt.edu</p>

Complete water conservation projects identified in campus-wide water audit	Implement cost-effective measures identified in audit	This project will be included in conjunction with the Energy Service Company (ESCO) initiative.	John Beach Director of Strategic Initiatives 231-9906 jbeach@vt.edu
Incorporate mixed use, compact, infill principles into Campus Master Plan	Mixed use development lessens vehicle miles traveled (largely due to the location of key support services within walking distance to classrooms, labs and offices). Compact and infill development patterns maximize the efficient use of utility and transportation infrastructure and lessen impact on contiguous, undeveloped land.	The 2006 Master Plan includes the development of three walkable districts (Academic Core District, Life Sciences District, and a future land bank "Golf Course District). In support of mixed use and infill development, a new dining and classroom facility (Academic and Student Affairs Bldg) is to be built between ICTAS I and Randolph. Implementation of efficient infrastructure and transportation planning includes the Perry St. parking garage (under construction), a district chilled water plant adjacent to it and the SW Campus Chilled Water Plant.	Lynn Eichhorn Executive Director, Planning, Construction, and Campus Plan Real Estate & Space 231-3523 eichhorn@vt.edu
Increase campus tree canopy by 100 trees per year	This action will add 100 2"+ caliper trees to the campus annually (net increase). This action will target adding trees to areas where multiple benefits can be achieved.	The tree planting goal is achieved primarily through the planting of new trees associated with capital projects, with new trees provided for normal landscape maintenance, with research trees provided by the Department of Horticulture's Urban Horticulture Center, and with trees provided for special "tree planting" events. A total of 252 trees were planted on campus during Fiscal Year 2009-2010. Of that figure, 153 were planted by students. The Department of Horticulture's Urban Horticulture Center provided 54 trees that were planted by students during the Sustainability Week 2009 in October, and provided another 74 native trees that were planted by student volunteers during the Earth Week 2010 in April. An additional 25 trees were planted during Sustainability Week 2010 in October. Virginia Tech was one of nine colleges and universities selected nationwide by the Arbor Day Foundation and Toyota for "Tree Campus USA" Status in 2008 (its inaugural year), and received recertification in 2009. On November 15, 2010, the Arbor Day Foundation and Toyota announced Virginia Tech won their "Tree Campus USA Root For Your Home Team Contest" and will receive \$2,500 in free trees which will be planted during Earth Week 2011 in April.	Matt Gart Landscape Architect 231-4186 gartm@vt.edu
Complete Hydrologic Model to guide stormwater plans and practices	Comprehensive approach to stormwater management (SWM) requires a campus model and good analysis	In progress. Hydrologic and Hydraulic models are being developed for individual projects and will be incorporated into a comprehensive model. Over 600 watersheds have been delineated and entered into the stormwater model. Goal is to have 80% of the campus modeled by October 2011.	Craig Moore Site Development Mgr University Planning, Design, & Construction 231-1788 cmoore@vt.edu
Incorporate Low Impact Development (LID) design in all new building and parking projects to minimize impervious surface and maximize retention and infiltration of runoff on-site	On-site stormwater retention and infiltration is the most effective option to manage quantity and quality of storm runoff	In progress. Past projects have utilized LID techniques to include the bioretention filters at New Residence Hall, Henderson Hall and Theater 101. Manufactured filters have been installed as part of the Football Locker Room Project and McComas Hall Addition Project. Future projects are incorporating LID into stormwater management (SWM), such as West End, the Visitors & Undergraduate Admissions Center, and the Academic & Student Affairs Building.	Craig Moore Site Development Mgr University Planning, Design, & Construction 231-1788 cmoore@vt.edu

Facilities Operations

Action / Measure:	Description / Rationale:	Status:	Contact Information:
Implement temperature settings outlined in Campus Energy and Water Policy 5505: 68°F heating season, 74°F cooling season.	Regulate set points of HVAC systems in buildings with automated control capability. Manually set thermostats not on the Building Automated System.	This has been implemented in accordance with the Campus Energy and Water Policy 5505.	Larry Smith Associate Director Mechanical/Electrical Systems 231-9921 lasmith@vt.edu
Operation of Campus Air Handlers: shutdown 3 rd shift	The shutdown of air handlers during unoccupied hours over the third shift began during Spring, 2009. Shutdown schedules were developed to match unoccupied hours on weekdays and weekends. Extended shutdowns were implemented during holiday periods and breaks in the school calendar	<p>Procedures have been implemented effective May 2009 to shut down campus air handling units during unoccupied periods, primarily the third shift on weekdays and extended hours on weekends. Since the program's inception in May, 2009, air handling units have been gradually added to the shut-down list. Approximately 172 air handling units in 40 buildings have been included. Preliminary calculations show an estimated savings of \$181,500 for the 2009 cooling season due to reductions in electricity and chilled water usage. For the first time, beginning in the fall of 2009, the University aggressively pursued air handling unit shutdowns during holiday and break periods. Preliminary calculations show an estimated combined electrical and steam savings for those periods as follows: Thanksgiving Break (Nov. 20-29): \$65,320; Winter Break (Dec. 18 – Jan. 18): \$307,150. Prolonged severe cold weather over the Winter Break period required some modifications to the air handling unit shutdown schedules. Preliminary calculations need to be verified with fixed metering data when it becomes possible.</p> <p>An expanded cooling season HVAC shutdown schedule was implemented for summer, 2010, with the # of scheduled buildings increased from 25 in 2009 to ~50 in 2010 and the number of scheduled-off hours increased from 72/week to ~80/week. In addition occupancy-based daytime schedules were implemented for several large venue areas (auditoriums, theaters, ballrooms, recreational facilities, etc.).</p>	Larry Smith Associate Director Mechanical/Electrical Systems 231-9921 lasmith@vt.edu
Operation of Campus Chiller System: maximize free cooling opportunities	Maximize use of free cooling during favorable seasons in lieu of operating chilled water	<p>Recording of daily free cooling tonnage production totals began 1/15/10. Results for 2nd half of January (1/14-1/31) were 543,067 tons, or 54% of total demand. Results for February were 2,502,402 tons, or 91% of total demand. Free cooling season ended ~3/2/10 and will resume next winter.</p> <p>Recommendation from the 2009 Chilled Water Infrastructure Master Plan Study to expand free cooling hours through installation of new plate-and-frame heat exchangers is currently underway.</p>	Fred Selby Energy and Sustainability Manager 231-6348 selby@vt.edu
Operation of Campus Chiller System: Raise chiller loop temperatures	Pilot program to raise chiller loop temperatures in existing chilled water system.	Positive results have been achieved with early efforts. Daily logs have been established and system weaknesses are being addressed as exposed by increased system operating temperatures. More definitive action will depend on the results of the campus chilled water study.	Fred Selby Energy and Sustainability Manager 231-6348 selby@vt.edu

Provide adequate and stable funding for Virginia Tech Recycling (VTR)	Continue campus-wide collection of mixed paper and cans/bottles from academic buildings, housing, and dining.	Facilities Services Department operating funds have been provided in Fiscal Year 2010 -2011 for recycling.	Michael Coleman Associate VP for Facilities Services 231-6291 colemann@vt.edu
Continue participation in the national RecycleMania competition including its Waste Reduction program	Compete in the national recycling competition for colleges and universities. Campuses compete in many different challenges, but most are on a per-capita basis.	Virginia Tech successfully participated in RecycleMania for the fourth consecutive year. Over 600 colleges and universities nationwide participated in RecycleMania 2010. University highlights included a 6.6% increase in our cumulative recycling rate, a 7.3% increase in our pounds of recycled material, and a 4.7% decrease in our pounds of trash. Food service organics (composting) pounds tripled and waste minimization significantly lowered. In general the University was ranked in the middle of the pack when compared to institutions within the ACC and the Commonwealth of Virginia in all categories. Results are available at: http://recyclemaniacs.org/Results.aspx .	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Optimize the recycling program by gathering and analyzing data on recycle bin volume by location and modifying bin placement	This could be used to determine where the most effective indoor and outdoor locations for bins would be by looking at traffic patterns	A student intern team collected data on 51 E&G facilities using a detailed protocol and determined the best locations for "resource stations" in those buildings. The Office of Sustainability and core planning team are currently developing a Comprehensive Waste Management Plan that analyzes the current system campus wide and makes short, mid, and long term recommendations to improve efficiency and functionality of the program. This plan and an implementation plan will be completed in spring 2011.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Increase recycling rate to 35% by 2012	Expand and optimize program and increase participation	Virginia Tech's Calendar Year 2009 recycling rate was 36.48%. This figure was determined using the Commonwealth of Virginia's Department of Environmental Quality "Locality Recycling Rate" formula. New construction and demolition waste for capital and renovation projects (over 11,000 tons) resulted in a waste diversion rate of over 75%.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Require purchase of Energy Star rated equipment	Energy Star unless use requires otherwise	Virginia Tech requires the purchase of Energy Star rated equipment when available. See Campus Energy and Water Policy 5505 with revisions.	Tom Kaloupek Director of Materials Management Purchasing 231-6221 kals@vt.edu
Require all purchases of copy paper to have at least 30% post consumer waste (PCW) content	30% PCW paper is readily available and not excessively more expensive than virgin paper. Units can order 50% or 100% if they chose to do so.	Completed.	Catherine Chambers Manager of Printing Services 231-3061 chamber1@vt.edu

<p>Establish sustainability guidelines for all product purchases</p>	<p>Furnishings: low impact carpet and other cleaning products</p>	<p>Sustainability guidelines are being developed.</p> <p>In January 2010 we have implemented a Green Cleaning Program for our department. We have switched to micro fiber mops and cloths and no longer use cotton. We have installed close to 65% of our buildings with chemical dispensing systems and are making progress to change more each quarter. All supervisors and managers have taken the Green Cleaning training provided by Betco. Our staff have received a refresher training on green cleaning during Spring Break. Our upright vacuums are considered "green". We have purchased an autoscrubber that meets the green requirements and uses ionized water instead of chemicals. We have purchased two additional units this year. Housekeeping LEED certified cleaning program was approved for the Henderson Hall Renovation and Theatre 101 Addition and the ICTAS II Project and will be our standard on future LEED projects.</p>	<p>Tom Kaloupek Director of Materials Management Purchasing 231-6221 kals@vt.edu</p> <p>Wyatt Sasser Director of Custodial Services 231-7426 jsasser@vt.edu</p>
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Transportation

Action / Measure:	Description / Rationale:	Status:	Contact Information:
<p>Fleet Services – Switch from diesel to 10% biodiesel</p>	<p>FY 08/09 pumped 32,705 gallons of diesel. No mpg available for equipment using diesel fuel</p>	<p>FY 09/10 41,030 gallons of biodiesel purchased. 5% biodiesel mix will be used October through March.</p>	<p>Gene Reed, Manager Fleet Services 231-9927 wereed@vt.edu</p>
<p>Fleet Services – Replace vehicles with more fuel efficient vehicles</p>	<p>Replace 11 Crown Victoria rated at 25 mpg. 100,000 miles = 4,000 gal of gas producing 35.12 metric tons of CO₂</p> <p>Options:</p> <p>a. HHR rated at 32 mpg on State contract cost \$15,421 each. 100,000 miles = 3,125 gal of gas producing 27.4 metric tons of CO₂</p> <p>b. Hybrid Prius / Civic rated 45 mpg, estimated cost \$23,000 each. 100,000 miles =2,222 gal of gas producing 19.5 metric tons of CO₂</p>	<p>Facilities Services has replaced 9 of the 11 Crown Victorias with the Chevrolet Cobalt (rated at 32 mpg). Goal is to replace the remaining 3 with fuel efficient vehicles.</p> <p>5 Honda Insight vehicles have been added to the fleet. These vehicles have an estimated 40-43 MPG.</p>	<p>Gene Reed, Manager Fleet Services 231-9927 wereed@vt.edu</p>
<p>Parking Services - Moving parking trucks over to T-3 electric personal transport</p>	<p>Using T-3 in place of trucks for enforcement. The cost to operate one T-3 is between 4 and 5 cents per day.</p>	<p>Parking Services has one T-3 and has purchased 3 Kubota diesel utility vehicles. Parking Services has reduced the number of pick up trucks in total by 4.</p>	<p>Richard McCoy Manager Parking Services 231-3949 rimccoy@vt.edu</p>

<p>Blacksburg Transit – Encourage Blacksburg Transit to provide users with real-time transit information and trip-planning</p>	<p>To improve BT efficiency and creating a user-friendly interface by working on getting customer oriented real-time transit info available.</p>	<p>Blacksburg Transit has invested in Intelligent Transportation System (ITS) technologies, which allows collected information to be shared with customers to improve their overall experience riding BT. This process started with BT sharing this collected data to publish service information in the Google Transit Feed (GTF) so Google could include BT in the Google trip planning system. The GTF was developed using historical data from the last two years to give an anticipated departure time for every stop in the system. BT continues work on three projects to share data:</p> <p>Twitter – BT has developed a system to tweet when a bus is nearing full capacity. Once a bus reaches 85 percent capacity a message will be sent to subscribers, including arrival times for the next bus(es). Passengers will ultimately be able to make informed decisions about their trip and eliminate time spent waiting at stops for buses. Deployment of this service has been delayed until 100 percent of the fleet has Automatic Passenger Counters installed in January 2011.</p> <p>BT4U - (Replaces MARTHA project) This system provides real-time information to the ridership of Blacksburg Transit. The Pilot has been delayed due to delays in acquiring equipment. The first version of this system, which will be deployed in January 2011, will allow passengers to text bus stops numbers to the system and receive bus arrival times. In the Spring the system should expand to include accessing the information online and via a telephone IVR system. This project serves to make the bus riding experience easier for both the new and experienced rider..</p> <p>Application Developers Support – BT is developing an Application Developer’s webpage to provide the data necessary, such as Google Transit Feed (GTF), for independent application developers to build transit centered software/applications. The information will be available to anyone who wishes to build an application, however BT will not be responsible for maintaining the software/application developed. An example of this is BT’s partnership with the Virginia Tech Computer Science department to develop bustracker.org. This website allows customers to track the bus online or access one of several applications for iPhones, Google Android devices or Blackberry(s) that can be used to track buses via these mobile devices. While this program will be useful to BT customers, it is not a BT program or BT project. This means that BT is not responsible for updates/upgrades to the application or funding. Funding in this case is provided by the VT Student Government Association. BT does however support the use of the application by providing the raw data on bus logistics and a link on our webpage, encouraging customers to try out this program and other programs that may be developed to support BT customers.</p>	<p>Debbly Freed Alternative Transportation Manager 231-0248 dfreed@vt.edu</p>
<p>Blacksburg Transit – Blacksburg Transit should continue to be encouraged to work with the Virginia Department of Rail and Public Transportation to replace old buses (replacement buses) and expansion buses with hybrid electric buses, or other new technologies that become available, to help them move away from fossil fuel dependence.</p>	<p>Blacksburg Transit should be encouraged to work with the Department of Rail and Public Transportation to replace old buses (replacement buses) and expansion buses with hybrids, or other new technologies that become available, to help them move away from fossil fuel dependence.</p>	<p>Blacksburg Transit received federal and state funding in FY2010 for seven 40-foot hybrid-electric buses and two 60-foot hybrid-electric buses. The 40 foot buses were delivered April-June, 2010 and the 60-foot buses arrived in July, 2010. The 60-foot articulated buses can carry 110 passengers and are mainly used on routes where heavy ridership requires several buses to run together to handle the loads. It is estimated that two 60-foot buses replace approximately three 40-foot buses. The 40 foot hybrid-electric buses were put into operation starting in September 2010 and the 60-foot articulated buses were put into operation starting October 2010 .</p>	<p>Debbly Freed Alternative Transportation Manager 231-0248 dfreed@vt.edu</p>

<p>Alternative Transportation – Assess participation in telecommuting /flex scheduling</p>	<p>Existing telecommute/flex schedule policy can have a big impact on commuting vehicle miles traveled (VMT) and emissions.</p>	<p>University Policy #4325, Alternate Worksite and Telework, was updated, December 2008. Policy 4300 (Hours of Work), Section 2.4, addressing alternate work schedules, was updated October 2008. Guidelines and agreement forms to accompany both policies were also developed. Completed agreements are maintained by VT Work/Life Resources. See http://www.worklife.vt.edu/alt_work_opt/index.html . New on-line system facilitates employee completion, approval and submission of agreement forms for telework and alternate scheduling, implemented October 2010.</p>	<p>Cathy Jacobs Director VT Work/Life Resources 231-3213 cajacobs@vt.edu</p>
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Behavior and Campus Life

Action / Measure:	Description / Rationale:	Status:	Contact Information:
Continue Green Team funding	Ensure funding for student coordinators	The Green Team is currently being re-organized and turned into an intern program within the Office of Energy and Sustainability. Presentations are expected to begin again in the spring 2011 semester.	Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Sustainability session at freshman and transfer student orientations	An introduction to green living on campus, the university's commitment to sustainability, and how they can get involved. Establishes a focus on sustainability for new students.	The Office of Energy and Sustainability (OES) participated in New Student Orientation 2010. Recent VT graduate and former SGA Director of Sustainability Alex Funk gave a "Sustainability Initiatives" presentation to all student orientation leaders. In addition, each leader received a two-page reference handout "Student Sustainability Guide for Orientation Leaders." Copies of the presentation and handout are on the OES website. SGA President Bo Hart included comments on ongoing sustainability initiatives in his welcoming remarks for students and parents.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Sustainable Living Guide (SLG) development	Given to all new and current students addressing sustainability initiatives on campus and ways to live more sustainably	The SLG is now an interactive website that students can visit to learn all the basics that they need to live a more green lifestyle. It is located at http://www.facilities.vt.edu/sustainability/greenliving.asp	Holli Drewry Assistant Director of Communications & Mktg Student Affairs 231-8670 hdrewry@vt.edu
Student "Green Fee"	A small student fee to pay for sustainability initiatives on campus	As an alternative to a student green fee, the Office of Budget and Financial Planning has established a pilot program to advance sustainability initiatives from recognized student organizations. The "Student Organization Sustainability Initiatives (Green RFP) Program" utilizes the university budget call format. Projects proposed must support the Virginia Tech Climate Action Commitment and Sustainability Plan. The specific process and timelines were developed in coordination with the Office of Energy and Sustainability and the Facilities Services Department. The pilot program was launched in August 2010 at the beginning of Academic Year 2010-2011. Student organizations submitted a total of eight RFPs. The Energy and Sustainability Committee reviewed and prioritized the projects, and the results were presented to the Office of Budget and Financial Planning for review and approval consideration at the end of October 2010.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Create a student sustainability internship program through the Office of Sustainability	Students can help with campus sustainability initiatives by either earning class credit or a small stipend depending on project	Facilities Services has established a student sustainability internship program. During the spring 2010 semester, 10 undergraduate students served as part time, unpaid interns, and worked on 4 different projects. There is one unpaid intern currently, and it will be expanded to 3-4 project groups during the spring 2011 semester.	Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Alumni sustainability update through magazine column or newsletter	Newsletter highlighting Office of Sustainability work to update and engage alumni	Virginia Tech Annual Report 2008-2009 contains article "Green Gaining Ground at University." Virginia Tech Magazine Fall 2009 Edition featured sustainability and highlighted the BOV's approval of the VTCAC Resolution. University Relations placed a "Sustainability Ad" in all official programs for Virginia Tech's six home football games. President Charles W. Steger featured sustainability in his "Virginia Tech in Review January 2010" highlight video.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu

Incorporate environmental awareness into the common book selection	Having a sustainability oriented text as the common book	The University Common Book Committee selected <i>'Animal, Vegetable, Miracle'</i> for Academic Year 2010-2011. This marks the second consecutive year that the Common Book has had a sustainability theme. Co-authors Barbara Kingsolver and Steven Hopp visited our campus several days prior to Sustainability Week 2010 and participated in several activities to include having discussions with select student groups, partaking in the fabulous Virginia Harvest Celebration Meal hosted by Dining Services, serving as special guests at a reception held at The Grove hosted by Mrs. Janet Steger, and giving a presentation to the campus and surrounding communities in Burruss Hall Auditorium. Daniel Goleman's <i>Ecological Intelligence</i> was our Common Book for Academic Year 2009-2010. Especially noteworthy is the Blacksburg Town Council selected Goleman's book as the first ever "Town Common Book." Dr. Goleman gave the keynote address for Sustainability Week 2009 on October 11, and had the opportunity to meet with students and participate in the SW 2009 Kickoff Ceremony.	Mary Ann Lewis Director of First Year Experiences 231-3341 malewis@vt.edu
Education, assessment, and encouragement campaign, Sustainability Pledge	Education sessions, assessments of practices, and regular encouragement of sustainable practices in campus units. Understanding these issues is important for changing behavior.	A Sustainability Pledge was developed and was launched during the Eco-Olympics. The pledge can be seen here - http://www.facilities.vt.edu/sustainability/pledge.asp .	Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Education session for all new VT employees during orientation	Communicate campus sustainability policies and goals to all new employees	The Office of Energy and Sustainability to develop a one-page information paper highlighting ongoing sustainability initiatives for presentation to the Associate VP for Human Resources for inclusion in their New Employee Orientation Program.	Hal Irvin Associate VP for Human Resources 231-7784 hirvin@vt.edu
Introduce Sustainability Pledge	Emphasize campus sustainability policy through a pledge by faculty and staff	The Energy and Sustainability Committee successfully conducted the first Virginia Tech Green Campus Challenge (GCC) during the 2010 Spring Semester. Blacksburg campus departments with 10 or more employees were eligible to complete the GCC survey. The survey encouraged our department leadership to establish sustainability procedures (similar to a pledge) with points awarded for implementation. Fifty departments participated representing over 4,700 employees, or 2/3ds of the Blacksburg campus work force. The GCC was modeled after the "Green Commonwealth Challenge" that was issued to all Virginia state agencies and institutions in 2009. As a demonstration of his support, Virginia Tech President Charles Steger hosted a representative from the four highest scoring departments at a 2010 home football game.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
IT collaboration and power strips distribution	Working with IT groups to promote turning computers off when not in use, and use of power strips to ease shut off	Campus Energy and Water Policy 5505, paragraph 3.3.2 Operations and Maintenance requests computers set to default to the sleep mode after 15 minutes or less of disuse. Exploring other affordable power saving measures.	Erv Blythe VP for Information Technology 231-4227 blythe@vt.edu
Create a faculty and staff (F/S) sustainability group.	This group would help address F&S behavior and develop innovative ideas on how to do so.	The University Governance System's Energy & Sustainability Committee has faculty and staff member representation. Exploring other collaborative opportunities for a less formal group.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu

Energy efficiency upgrades and infrastructure improvements in all residence halls.	Re-lamping buildings, low-flow water fixtures, motion sensors, etc. The installment of these items will considerably reduce energy and water consumption in the residence halls.	Water saving toilets, urinals, flush valves, faucets, and showerheads have been installed in Pritchard and Lee Halls. Pritchard received 148 toilets & flush valves, 108 urinals & flush valves, 48 sink faucets, and 144 showerheads. Lee received 88 toilets with flush valves, 30 urinals & flush valves, 32 sink faucets, and 116 showerheads. The renovation of Amber Johnston Hall will feature energy and water efficiency improvements.	Tim Gift Associate Director for Facilities Management Student Programs 231-3180 tgift@vt.edu
Increased recycling availability in and around residence halls	Making paper and commingled recycling more accessible in and around the residence halls by adding more bins and an efficient collection system	This will be a key component of the Comprehensive Waste Management Plan. The Plan is currently being developed by members of the Office of Energy and Sustainability & Housing and Dining Services . The Student Organization Sustainability Initiatives Green RFP pilot program submission contained the purchase of ten external mixed paper recycling containers as the #2 priority for funding consideration.	Dr. Leon McClinton Director of Residence Life 231-6207 leonm@vt.edu Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Reusable Bag and Reusable Bottle initiatives	Provide reusable bags for all on-campus students to use for to-go dining, bookstore purchases, and grocery shopping. Provide reusable bottles for primary use in dining halls.	Virginia Tech Services (VTS) Inc. introduced reusable bags for purchase at the University Main Bookstore, the off-campus Volume II Bookstore, and at their on-campus satellite locations. SGA, the EC, the Residence Hall Federation, and Housing & Dining Services have decided not to pursue providing reusable bags for all on-campus students. Instead, signage will be placed in the dining halls encouraging patrons to bring their own reusable bag. Dining Services has selected a specific reusable bottle design that meets appropriate food safety standards for use in the dining centers. The bottle was introduced during a pilot program in Earth Week 2010; all 200 bottles sold out within 3 days. Bottles were made available for reservation during New Student Orientation and are currently available for sale at Owens Food Court on an on-going basis. Students receive free water and discounted fountain drinks with use of the approved bottle.	Fred Koziol Operations Division Manager VTS 231-5991 fredk@bookstore.vt.edu Elena Dulys Housing & Dining Services Sustainability Coordinator 231-1139 edulysn@vt.edu
Sustainability session/orientation for Residence Advisors	Have a session on the major environmental issues and causes, as well as an overview of what Virginia Tech is doing about these issues to be more sustainable	No meeting with the Residence Advisors have been arranged for Academic Year 2010-2011.	Dr. Leon McClinton, Director of Residence Life 231-6207 leonm@vt.edu Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Create a Green Model Room	Replacing all of the items in the current model room with energy efficient and eco-friendly products	Discussion is underway. The current vendor will be used to replace products in the room and a "Green Purchasing Guide" is being developed to have available in the room for the parents of prospective students.	Dr. Leon McClinton, Select Student Programs Personnel
Waste reduction through smaller-batch cooking and going tray less	See EPA Surplus Recovery Hierarchy	Dining Services has initiated a variety of initiatives. Trayless introduced in the two "All You Care to Eat" Dining Halls (Dietrick D2 and Shultz). Dining Services is currently investigating the implementation of an ongoing waste tracking system to better identify ways to reduce food waste and overproduction.	Elena Dulys Housing & Dining Services Sustainability Coordinator 231-1139 edulysn@vt.edu

<p>Diverting edible un-eaten portions to Feeding America member organizations.</p>	<p>See EPA Surplus Recovery Hierarchy</p>	<p>Initiative began during the 2009 spring semester, and was expanded during the 2009 fall semester. All "grab-n-go" items are currently being donated throughout all dining centers. A pilot study begun at D2 (Dietrick Dining Hall) to divert other prepared and properly cooled "hot foods" using reusable containers, with hopes to expand this program to other dining centers in the future.</p>	<p>Elena Dulys Housing & Dining Services Sustainability Coordinator 231-1139 edulysn@vt.edu</p>
<p>Composting in-edible organic wastes and utilizing compostable containers</p>	<p>See EPA Surplus Recovery Hierarchy</p>	<p>In late 2008 Poplar Manor Enterprises in Riner, Virginia, received a State Department of Environmental Quality permit to operate the first composting facility in the region. Dining Services began participating in the program with PME at their Southgate Food Processing Facility in January 2009 and then expanded composting to the Owens Hall Dining Facility (including Owens Food Court, Hokie Grill, and Personal Touch Catering) in October 2009. Composting began at D2 Dining Center in July 2010. Thus far for calendar year 2010 Dining Services has composted over 250 tons of food and other organic waste on campus. The next phase of composting expansion is planned for the other Dietrick dining centers (Deets and DXpress) during the Fall 2010 semester. The goal is to eventually expand to composting in all dining centers as space is available.</p>	<p>Elena Dulys Housing & Dining Services Sustainability Coordinator 231-1139 edulysn@vt.edu</p>
<p>Pledge to support local and sustainably produced food</p>	<p>Purchasing food products from local suppliers who use sustainable farming practices</p>	<p>The Farms & Fields Project in Owens Food Court is Dining Services signature local, organic, and sustainable venue where these products are offered daily. In addition to Farms and Fields in the Owens Food Court, local products are being integrated into other Dining Centers as possible (e.g., VT meats, Kentland Farm Produce, and Homestead Creamery Ice Cream). The Dining Services Garden at Kentland Farm has expanded to nearly two acres of sustainable vegetable production for use in Farms and Fields and elsewhere. Additionally, Dining Services hosted its first all-local and sustainable meal at D2 in September 2010, The Virginia Harvest Celebration Meal, in honor of the 2010-2011 Common Book and the authors' campus visit. Over 2300 customers attended.</p>	<p>Elena Dulys Housing & Dining Services Sustainability Coordinator 231-1139 edulysn@vt.edu</p>
<p>Incorporate sustainability into the student budget board process</p>	<p>Making student organization budget proposals electronic</p>	<p>The proposal process is now completely electronic with our Small Grant Funding requests as well as electronic sign ups for all budget training workshops.</p>	<p>Monica Hunter Associate Director of Campus Programs UUSA 231-5431 monicah@vt.edu</p>
<p>Continue the development of a green facility improvement plan</p>	<p>A currently being developed plan to incorporate more sustainability initiatives into practice</p>	<p>The Squires Student Center "Ten Point Green Facility Sustainability Plan, 2009-2015" is completed and implementation is in progress. See: http://www.facilities.vt.edu/sustainability/squires_2010.pdf.</p>	<p>Scott Reed Senior Associate Director of Operations UUSA 231-5431 sreed@vt.edu</p>
<p>Add refilling stations for water bottles in student centers</p>	<p>Making stations available where students can refill their bottles with filtered water</p>	<p>Conversion of the existing water fountains to ones with a bottle water refilling station feature is in progress. In the Squires Student Center, four of the seven water fountains have been converted. In the Graduate Life Center, one of the two water fountains have been converted. To date none of the three water fountains in the Johnston Student Center have been converted. As funding is made available, the plan is convert all of the water fountains in those three facilities.</p>	<p>Scott Reed Senior Associate Director of Operations UUSA 231-5431 sreed@vt.edu</p>

Conduct an energy and waste audit and develop an efficiency and conservation plan for the Inn at Virginia Tech and Skelton Conference Center (IVT&SCC).	Assess the facility and operations to identify best ways to reduce costs, emissions, and energy consumption.	IVTSCC has developed key actions steps to conserve energy. Monitor all light settings in public areas meeting rooms and sleeping rooms. Replace incandescent lamps with compact florescent lamps. Monitor daily room temperatures in meeting rooms, sleeping rooms and public areas. Recycling program is in effect with the following items, cardboard, all paper products, cans, bottles, (plastic and glass), as well as light bulbs. Managing Food waste.	Chris Compton Director of Property Operations IVT&SCC 231-0151 ccompton@vt.edu
More sustainable experience for guests at The Inn at Virginia Tech and Skelton Conference Center (IVT&SCC).	Having sustainability amenities and aspects of conferences let guests know that operations are sustainable.	The Inn at Virginia Tech is a Virginia Green Lodging Facility. The Skelton Conference Center is a Virginia Green Conference Center. Both have met all criteria for the Department of Environmental Quality's Virginia Green Program: http://www.deq.virginia.gov/p2/virginiagreen The Virginia Green Lodging Profile is at: http://www.deq.virginia.gov/export/sites/default/p2/virginiagreen/pdf/inn_at_VT.pdf	Chris Compton Director of Property Operations IVT&SCC 231-0151 ccompton@vt.edu
Waste Stream Assessment for major athletic venues.	Study to figure out how much of which materials are being generated at games. Helps in developing a waste reduction strategy.	The SGA Director of Sustainability Initiatives and the Environmental Coalition conducted a waste audit in the tailgating parking lots at the first home football game on September 12, 2009. Results determined approximately 50% of the items placed in trash containers were recyclable.	Denny Cochrane Sustainability Program Manager 231-5184 denniscc@vt.edu
Game Day Recycling Program	Inside Lane Stadium and tailgating recycling program to collect recyclable material. Emphasizes and encourages sustainable behavior at athletic events.	For the 2010 season, OES partnered with the YMCA, SGA, an EC to develop a game day recycling program. Blue, transparent, bags were distributed at almost every home game and significantly increased game day recycling rates. We also began working with a different facility that picked up all of the material generated to extract the recyclable materials. Planning for the 2011 season will begin in January.	Angie De Soto Campus Sustainability Planner 231-7358 adesoto@vt.edu
Operations assessment and development of an efficiency and sustainability plan for the Athletic Department	Assess facilities and operations to determine where waste can be cut and more efficient practices can be incorporated.	Energy Service Company Technical Audit Phase for Cassell Coliseum is complete and specific recommendations being evaluated for the adoption of energy conservation measures. New Basketball Practice Facility and Football Locker Room has motion lighting in every room. Athletic Department maximizing the use of recycling containers and recycled paper. New Locker renovations over the next 18 months will include replacing toilets and showers with more efficient controls to reduce water use.	James Torgersen Facilities Manager Department of Athletics 231-7584 jamest08@vt.edu

Academic Programs

Action / Measure:	Description / Rationale:	Status:	Contact Information:
Establish a Senior Fellow or comparable position to coordinate and develop research, instruction, & outreach sustainability programs	Focused position to take advantage of funding opportunities in sustainability research, outreach, instruction	In May 2009, the Provost asked John Randolph to assist him in advancing the university's academic programs related to sustainability. Randolph has established an ad hoc committee across the eight academic colleges, and formed five work groups related to implementation. The group is addressing undergraduate instruction first, then will turn to graduate instruction and finally to research and outreach. The initiative has a three year timeframe. One initiative is the "College Survey of Academic Programs on Sustainability." The survey's intent is to inventory all college's sustainability academic degrees and programs; to characterize their sustainability focus or brand; to capture ongoing collaboration, integration, and innovative teaching and learning; and to address college sustainability aspirations. The survey was distributed on December 15, 2009, and all of the colleges have responded. A full report with recommendations will be completed inspring 2011 .	Dr. John Randolph Professor, Urban Affairs & Planning, School of Public & International Affairs 231-7714 energy@vt.edu
Establish a Virtual School of Sustainability to coordinate sustainability-related instruction and learning programs	A web-based clearing-house of all sustainability-related instruction and learning programs.	One work group of the ad hoc committee is addressing the nature and web-presence of such Virtual School. Based on the results of the College survey (above), the work group will develop a strategy for the Virtual School website by fall 2010.	Dr. John Randolph 231-7714 energy@vt.edu
Establish a Green Curriculum Coordinator to develop the Virtual School of Sustainability	GCC coordinates programs and develops VSVT	Dr. John Randolph's assignment to the Provost is equivalent to a Green Curriculum Coordinator.	Dr. John Randolph 231-7714 energy@vt.edu
Provide stable funding of marquee VT sustainability instructional programs: Earth Sustainability and Green Engineering	Base funding for ES and GE which serve as primary vehicles to integrate sustainability into curriculum	The Earth Sustainability program was awarded the University's prestigious Exemplary Department Award in February 2010. Both the ES and GE programs are undergoing a planning process for the programs' future. One work group of the ad hoc committee is addressing these two programs as well as other cross-college programs. Another cross-college sustainability program is the Catawba Sustainability Center, a 377 acre site in roanoke county now administered by the Office of Outreach and International Affairs. A faculty and student group and representatives of the VA Department of Conservation & Recreation will develop a 50-year plan for the site. A planning workshop for the site involving various stakeholders is being held May 5, 2010.	Dr. John Randolph 231-7714 energy@vt.edu
Benchmark peer institutions and inventory VT undergrad and grad degree, minor, and certificate programs to identify gaps and opportunities to enhance offerings available to students	University needs a full inventory of programs and good ideas borrowed from peer institutions	Under the three-year initiative to advance academic programs related to sustainability, there will be a bench-marking exercise. The "College Survey of Academic Programs on Sustainability" will identify peers in sustainability.	Dr. John Randolph 231-7714 energy@vt.edu
Implement campus-wide sustainability minor, graduate certificate; consider literacy requirement	Multi-path approach to assure all VT students understand the challenges & solutions of their planet	Work groups of the ad hoc committee are addressing these issues. This is included in the "College Survey of Academic Programs on Sustainability."	Dr. John Randolph 231-7714 energy@vt.edu
Retain the Special Assistant for Energy Initiatives position in Office of the Vice President for Research	Point person for energy and sustainability research initiatives	In accordance with the recommendation in the "Selective Mid-Term Review of the 2006 Strategic Plan" and the Provost's "Response and Action Plan," the Office of the Vice President for Research has created the new position "Director of Energy Initiatives." Search process is underway. Rod Hall, Associate VP for Research, is serving in an interim role.	Dr. John Randolph 231-7714 energy@vt.edu

Promote new research in energy efficiency and sustainability using the university campus as a laboratory and using undergraduate research		The Office of the Vice President for Research has funded the Community Action Grants for Energy Research Program for Academic Year 2009-2010. Two grants selected are the "Y-Wind" YMCA Program and "Advancing the Blacksburg Energy and Climate Action Program." The "Y-Wind and Solar Demonstration Project" Dedication Ceremony was held at the YMCA on North Main Street in Blacksburg on September 18, 2010 during Sustainability Week 2010.	Dr. John Randolph 231-7714 energy@vt.edu
Benchmark peer institutions and inventory VT sustainability-related research expertise, centers, and institutes to identify gaps and opportunities to enhance sustainability research funding	University needs a full inventory of programs and good ideas borrowed from peer institutions	Under the three-year initiative to advance academic programs related to sustainability, there will be a bench-marking exercise. The "College Survey of Academic Programs on Sustainability" will identify peers in sustainability.	Dr. John Randolph 231-7714 energy@vt.edu
Establish a Sustainable Development Coordinator in Office of Outreach and International Affairs (OIA).	SDC coordinates/develops sustainability outreach & green training professional education programs	A Sustainability Development Coordinator has not been identified, but John Randolph is assisting the provost with sustainability-related academic programs including outreach and engagement. See also the first item in the Academic Programs category on the previous page.	Dr. John Randolph 231-7714 energy@vt.edu Dr. John Dooley, VP for Outreach and International Affairs, 231-3205, jdooley@vt.edu
Develop a Green Jobs Training Program in Continuing and Professional Education	Significant funding should be available for Green Job development	In January 2010 a \$3.8 million project for Green Jobs training was funded by the Department of Labor as part of the American Recovery and Reinvestment Act (ARRA). Virginia Tech, is one out of 7 regional partners pioneering this effort to revive Virginia's economy and train and employ citizens throughout the Commonwealth in green jobs. Partner's include he Virginia Tech's Office of Economic Development in OIA, VT faculty in the College of Architecture and Urban Studies and the College of Engineering, faculty from three Southwest Virginia Community Colleges (Virginia Western, New River, and Wytheville), and the Community Housing Partners (a Christiansburg nonprofit organization). The CREATES (Construction, Retrofitting, and Energy-Efficiency Assessment, Training and Employment Systems) Program provides free training "Energy Training Partnership" grant, in green construction, retrofit and energy efficiency industries to unemployed, dislocated and incumbent workers.	Dr. John Randolph 231-7714 energy@vt.edu Dr. John Dooley, VP for Outreach and International Affairs, 231-3205, jdooley@vt.edu
Identify a Green Jobs Coordinator in Career Services	Assist VT students in seeking growing market for green jobs	While not having a specific person designated as their Green Jobs Coordinator, the Director and staff have green employment resources assembled and readily available for use by interested students.	Donna Cassell Director Career Services 231-8077 cassell@vt.edu