HOKIES TREAD LIGHTLY

2017-18 Sustainability Annual Report

FACILITIES
VIRGINIA TECH™

Contents

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Overview

The Office of Sustainability was established in accordance with the Virginia Tech Climate Action Commitment (VTCAC) and is responsible for monitoring energy usage, Green House Gas (GHG) emissions, overseeing the implementation of the VTCAC and the Sustainability Plan, coordinating programs for campus sustainability, and managing a campus-wide student internship program.

Virginia Tech is a leader in campus sustainability. In 2009, the Virginia Tech Board of Visitors approved the first-ever VTCAC. These documents guide the direction of the university by setting goals for the next 50 years to reduce Virginia Tech's environmental footprint.

Virginia Tech is rated by the Association for Advancement of Sustainability in Higher Education (AASHE) and their Sustainability Tracking Assessment & Rating System (STARS) yearly. In 2017, Virginia Tech earned a second STARS Gold Rating with the highest score achieved to date for all institutions in the Commonwealth of Virginia and the Atlantic Coast Conference. Virginia Tech's STARS Gold Rating is a solid demonstration of the university's commitment to advancing sustainability in academics (curriculum and research), engagement, operations, and planning and administration.

Climate Action Commitment

Virginia Tech serves as a model community for a sustainable society. Sustainability is an integral part of the fabric of the university as it pursues enhanced economic stability and affordability, diversity and inclusion, environmental stewardship, expansion of knowledge, and education of future leaders.

Sustainability: Next 50 Years

In 2009, the Board of Visitors approved the first-ever the Virginia Tech Climate Action Commitment (VTCAC). This commitment sets goals for the next 50 years to reduce Virginia Tech's environmental footprint. VTCAC was reaffirmed in 2013.

Goals

1. A leader in campus sustainability
2. Represent VTCAC&SP in Strategic Plan
3. Reduce GHG emissions to 80 percent below 1990 emission level by 2050
4. Improve energy efficiency, reduce energy waste, replace high-carbon fuels, etc.
5. Maintain a sustainability office
6. Strive for LEED certification
7. Electricity and heat efficiency
8. Achieve a 50 percent recycle rate by 2020
9. a. Purchase or lease Energy Star equipment and maximize practicable recycled content paper

   b. Consider a product's life cycle cost and impact when making purchasing decisions
10. Engage students, faculty, and staff to develop and implement innovative strategies for efficient and sustainable use of energy, water, and materials in all university-owned facilities
11. Transportation energy efficiency through parking, fleet, and alternative transportation policies and practices
12. Develop and implement innovative sustainability-related academic programs in instruction, research, and outreach
13. Monitor energy use and GHG emissions and change internal and external conditions, prepare an annual 'report card' showing progress towards targets
14. Provide funding to support sustainability programs

Our Partners

To achieve the university's energy and sustainability goals, the Office of Sustainability works collaboratively with:

University Departments

Alternative Transportation

Sustainability Institute – College of Natural Resources and Environment

Dining Services

YMCA at Virginia Tech

Residential Leadership Community

Student Engagement & Campus Life

Housing and Residence Life

Forest Resources and Environmental Conservation

The Arboretum Committee

Green Engineering Program – College of Engineering

Virginia Tech Corps of Cadets

Environmental Policy and Planning – College of Architecture and Urban Studies

Community Groups

Blacksburg Farmers Market

Sustainable Blacksburg

Town of Blacksburg

Student Groups

Environemental Coalition

Environmental Student Organization

Food Justice at Virginia Tech

Galileo Living Learning Community

Hypatia Living Learning Community

Residence Hall Federation

Society of Renewable Resources

Stroubles Creek Restoration Initiative

Student Chapter of the American Water Resources Association

Student Government Association

Students for Sustainable Practice

Sustainable Food Corps

The Campus Kitchen at Virginia Tech

The Green Program - Study Abroad at Virginia Tech

Energy Reduction Efforts

The Office of Energy Management, also within the Division of Operations and the Facilities Department, was established to guide the operations of the university to achieve tangible reduction in energy consumption on campus through the development and implementation of various Demand Side Management (DSM) policies, initiatives, and projects. The Office of Sustainability works closely with the Office of Energy Management in pursuit of the shared goals.

Five-Year Energy Action Plan

The Office of Energy Management conducted a benchmarking analysis of campus buildings which identified:

50 energy intensive buildings

Representing

35 percent of the university structures

These building account for

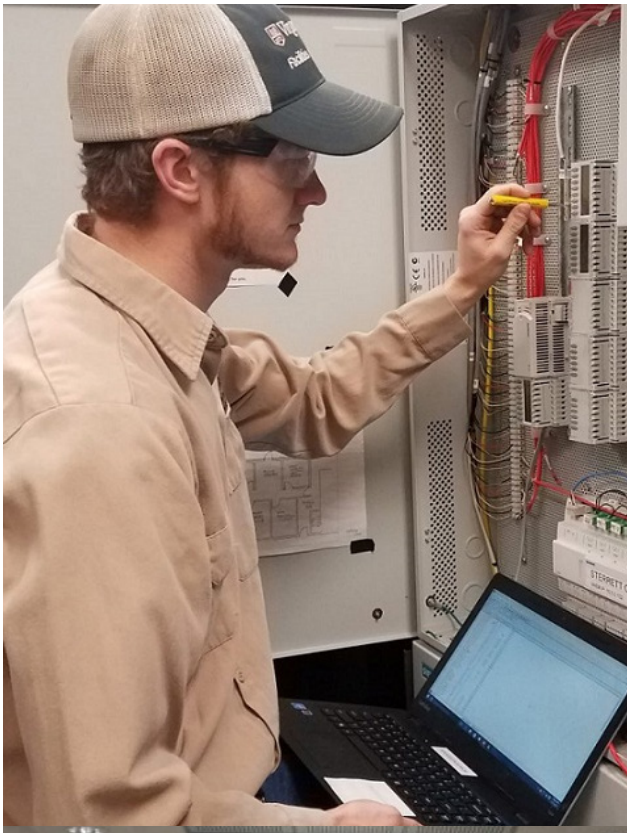
70 percent of the main campus utility cost

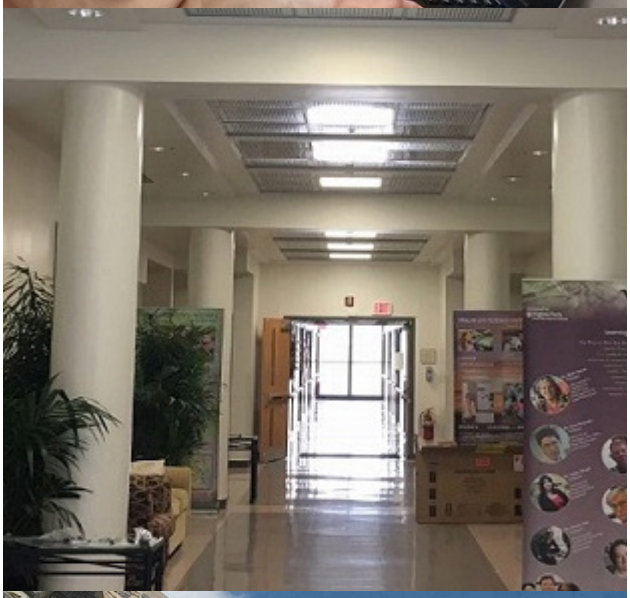
Five-Year Energy Action Plan

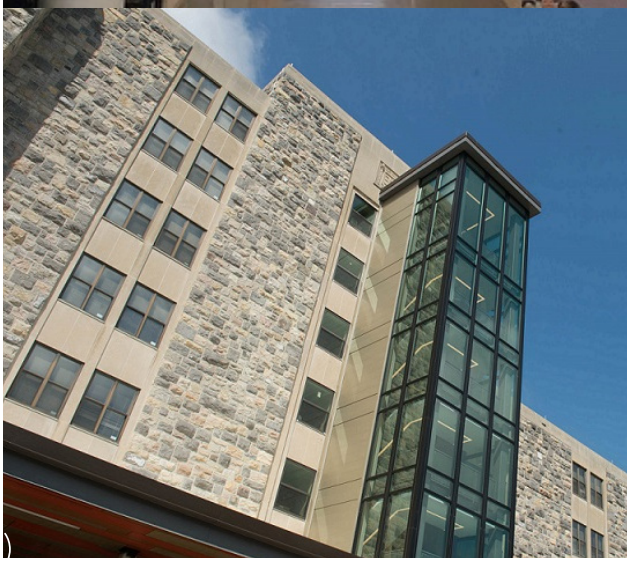
Since 2016, three phases of the Five-Year Energy Action Plan have been successfully implemented. The following five programs are included in the plan:

- Conduct “Back of the Envelope” and “Investment-Grade” energy audits
- Improve steam and chilled water metering infrastructure
- Implement energy conservation retrofit projects
- Deploy energy data visualization and fault detection software tool
- Perform retro-/re-commissioning of the Building Automation System

> > > **$6 million** Estimated energy cost savings through the life of the program since 2016







Demand Side Management

Demand Side Management promotes energy efficiency by upgrading, retrofitting, and commissioning mechanical, lighting, and electrical systems in buildings. The Five-Year Energy Action Plan was launched to address the energy efficiency improvements with 50 of the most energy intensive buildings. Additionally, other ongoing projects are in effect to manage campus energy consumption:

- Combustion testing of boilers and furnaces
- Enhancement of electric sub-metering infrastructure
- Fume hood energy reduction programs
- Greenhouse lighting technology improvements
- Thermal imaging of campus buildings
- Lighting bulb/fixture replacement with LED

Energy Efficient Design

To establish university standards which go beyond the applicable Virginia Energy Code, the Facilities Department has added a section to Virginia Tech's Design and Construction Standards that speaks to "Guidelines for Energy Efficient Design." The guide applies to all new construction and new addition and renovation projects and will over time make significant advancements to energy reductions and savings.

Behavioral Energy Reduction Projects

Addressing the behavioral aspect of energy savings allows the Office of Energy Management to directly interact the energy user. The Laboratory Ventilation Energy Reduction Program coupled with the Light Switch Sticker Program encourage the user to participate in energy saving practices such as turning off unused lights and shutting fume hoods when not in use. These projects result in energy savings on a building-wide scale with a low initial cost.

The ultimate goal of these projects is to encourage the user to adapt these practices, which will carry forward to the same appliances in other buildings across campus.

Water and Energy Hog Identification

To seek improvements in buildings with high energy or water use, the Office of Energy Management is proactively identifying buildings to classify as energy or water hogs. Once the buildings are identified, a plan can be created to pinpoint the areas of the most use and ultimately take steps towards implementing projects to improve these uses. By actively seeking buildings with high utility usage, Virginia Tech can continue to improve the efficiency of its energy and water use.

Emissions Data:

CY 2017 Total Emissions (Tons CO2-e): 278,726 (-1%)

FY 2018 Total Emissions (Tons CO2-e): 262,101 (-9%)

Waste Disposal, Composting, and Recycling

Composting On Campus

Dining Services has been composting food waste since 2009 and, to date, the composting program has diverted over 5,890,560 pounds of waste from the landfill. In 2017, 219 tons of composted food waste was collected from our 11 dining facilities. The university consolidated the waste at a central storage facility on campus and delivered the waste to a regional composting facility, Royal Oak Farm, a family-operated facility located in Evington, Virginia.

fyi

5,890,560
pounds of waste kept out of the landfill since 2009

219 tons of composted food waste was collected in 2016-17

Single Stream Recycling

Single stream recycling began in the summer of 2015 for the Blacksburg campus. Standard single stream signage is being used on all single stream advertising on campus.

In addition to bottles, paper products can now be dropped into solar trash compactors for recycling. Additionally, new large outdoor recycling containers have been placed outside residence halls and 10 new sets of indoor single stream recycling and waste stations were placed in McBryde Hall. The McBryde indoor waste stations consist of 10 pairs of metal containers placed inside the main entrances on the first, second, and third floors. The single stream recycling container is painted blue and contains the standard single stream signage decal on the front face. The trash container is painted black and contains the landfill decal on the front face. Magnets hold the two containers together and both are anchored to the floor to meet fire code.

These waste station guidelines are now officially in the University Design Standards, and remain an example of the highest standard across campus. University design standards state: "Indoor waste stations will consist of an appropriate number of pairs of non-combustible collection containers placed side-by-side with one designated and labeled for "single stream recycling" and the other designated and labeled for "trash." Ideally, containers will be recessed into the interior walls of the building so as to not protrude into the hallway space. If that is not possible, the containers should be placed on the floor and secured to the building structure to meet fire code. A waste management collection station should be placed in common areas that generates a large volume of recyclable material such as mail rooms, break rooms, and meeting rooms.

From Jan. 1 - Dec. 31, 2017, Virginia Tech achieved a 39.2 percent recycling rate using the Commonwealth of Virginia Department of Environmental Quality Formula. This represents a 1 percent rise from the previous year. We anticipate that rate to crest the 40 percent threshold now that the composting contract with Royal Oak Farm is in effect for calendar year 2018.

2017 Recycling Rate:

39%

Sustainable Dining

37,457 pounds of produce were harvested and served in dining centers on campus in 2017

Local and Sustainable Products

Virginia Tech Dining Services strirves to provide food that is produced as clsoe to campus as possible. Many of the foods served are even grown and produced on campus. As defined by the Advancement of Sustainability in Higher Education, local products are grown or produced within 250 miles of Blacksburg. Other sustainable products include Fair Trade items..

The Farms and Fields Project:

The Farms and Fields Project in Owens Food Court offers a seasonal menu highlighting local, sustainable, and organic foods. From farm-fresh butternut squash lasagna to local sausages and bagels, Farms and Fields gives students a unique look into what it means to eat with the seasons.

Homefield Farm

Homefield Farm is a partnership between Dining Services and the College of Agriculture and Life Sciences. The six-acre educational farm grows fruits, vegetables and herbs for Virginia Tech Dining Services, and serves as a site of experiential student learning, interdisciplinary research, and community outreach. Homefield Farm is located at Virginia Tech's Kentland Farm. There are also opportunities for student learning, including the Sustainable Agriculture Practicum and the Civic Agriculture and Food Systems Minor.

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Foods sourced on campus:

- Produce – Homefield Farm
- Beef, lamb, pork, eggs, milk – Virginia Tech Meat Center
- Hydroponic herbs – Farms & Fields in Owens Food Court

Reusable To-Go Program:

The Reusable To-Go (R2G) program represents a collaboration between the Office of Sustainability, Student Government Association (SGA), and Housing and Residence Life. Since launch in 2014, over 180,000 meals have been served in R2G containers, helping reduce waste and cut costs associated with compostable to-go containers.

Waste Reduction:

Dining Services works with the Campus Kitchen at Virginia Tech to divert unused food to those in need within the New River Valley. Since the relationship began in 2015, the program has diverted over 95,960 pounds of food.

Alternative Transportation

The Office of Parking and Transportation coordinates the university's alternative transportation efforts and offers the following programs:

Bus, Bike, Walk, and Carshare

Alternative Transportation promotes and encourages the use of alternative modes of transportation (e.g., bicycling, walking, vanpooling, carpooling, riding transit) to get to, from, and around campus.

Hokie Bike Hub is a bicycle maintenance and commuter education center on campus. Cyclists have access to tools and resources for self-service bike repair and can also attend bike maintenance workshops. The Bike Hub has become the home of bicycling on campus and serves as a social space for cyclists to interact with and learn from one another.

Several transit partners provide service locally (Blacksburg Transit, Radford Transit and the VTCRI Shuttle), regionally (Smartway), and long distance (College Transit, Home Ride of Virginia, Virginia Breeze, and Campus Connect).

Roam NRV is a bike share program that will be launched in summer 2018 through a regional partnership among Virginia Tech, Blacksburg, Christiansburg, and Montongomery County. There will be 12 bike stations in the network with 8 on campus. There will be 75 total bikes in circulation.

The university works with Zimride and RIDE Solutions for ride matching and Zipcar for car sharing.

Alternative Transportation reports on the use of each alternative transportation in the biennial Commuter Survey and encourages safe use through the Heads Up Hokies campaign.

Green Buildings

LEED, or Leadership in Energy and Environmental Design, is the most widely-used green building rating system in the world. LEED provides a framework to create healthy, highly efficient and cost-saving green buildings.

In 2009, then Governor of Virginia Tim Kaine issued Executive Order 82, Greening of State Government, that stated all new buildings greater than 5,000 gross square feet in size, or major renovations where the renovation exceed 50 percent of the value of the building, shall conform to LEED Silver or Green Globes two-globe standards. The university Board of Visitors approved the original Virginia Tech Climate Action Committment (VTCAC) in June 2009, just nine days before Executive Order 82. The VTCAC prescribed that the university will pursue LEED Silver Certification or better, thus, meeting or exceeding the requirements of the Executive Order 82. The revised VTCAC maintains that condition and added language for existing buildings. The university has 27 LEED-registered buildings totaling 1.80 million GSF (16-certified, 2 occupied/pending certification, 5 under construction, and 4 in design).

Henderson Hall Renovation and Theatre 101 Addition	Gold	2/1/10
Football Locker Room Addition	Silver	10/1/11
ICTAS II (Institute for Critical Technology and Applied Science)	Gold	11/1/11
Visitors and Undergraduate Admissions Center	Certified	8/1/12
Academic and Student Affairs Building (Lavery Hall)	Silver	4/1/13
Vet Med Instructional Addition	Silver	6/1/13
Ambler Johnston Hall	Gold	11/1/13
Chiller Plant, Phase I (Southwest Chiller Plant)	Silver	11/1/13
Center for the Arts (Moss Arts Center)	Gold	5/1/14
Human and Agricultural Biosciences Building I	Gold	4/17/15
Indoor Athletic Training Facility	Silver	10/5/15
Signature Engineering Building (Goodwin Hall)	Gold	10/28/15
Renovate Davidson Hall	Certified	3/11/16
Upper Quad Residential Facilities (Pearson Hall)	Silver	12/16/16
Oak Lane Phase IV	Silver	10/4/17
Upper Quad Residential Facilities (New Cadet Hall)	Silver	6/1/18

Sustainability Week 2017

Sustainability Week is a partnership between Virginia Tech, the Town of Blacksburg, and Sustainable Blacksburg that highlights sustainability efforts in the town and on campus. More than 20 events were scheduled the week of Sept. 16-24, 2017.

Highlights included:

Active Commute Celebration: This event is hosted by the Office of Alternative Transportation a offers an opportunity for the community to learn more about available alternative transportation options around campus.

Virginia Tech Sustainability Expo: Virginia Tech continues to approach many important target dates for our VTCAC goals. The Office of Sustainability hosted a Sustainability Expo to inform the campus and community on progress towards these goals. The event consisted of an expo-style education area, as well as a panel discussion and Q&A session from sustainability professionals across campus.

Blacksburg Bike Parade: The first-ever Blacksburg Bike Parade kicked off with Mayor Ron Rordam leading the town in a family-friendly bike parade from Virginia Tech Electric Service Parking Lot to the Blacksburg Farmers Market.

Stroubles Creek Restoration Initiative: Stroubles Creek has been declared an impaired waterway by the Virginia DEQ. The Stroubles Creek Restoration Initiative aims to improve the health of this creek and the animals that inhabit it by creating a riparian buffer zone, reducing harmful runoff from nearby farms and pastures, and by protecting existing vegetation from deer. This event engaged volunteers to plant trees, remove invasive species, and help maintain past years' work.

Rocky Forge Wind - Virginia's First Wind Farm: Virginia's first wind energy farm is actively being developed in Botetourt County and is expected to power up to 20,000 homes annually. The Office of Sustainability partnered with Apex Clean Energy to educate students and community members about the project, long-term benefits, and to meet the team behind the development.

Earth Week 2018

With the mission to "build a more just and sustainable community through education, action, and appreciation for our world," Virginia Tech's annual Earth Week events are led by The Environmental Coalition at Virginia Tech, with support from nearly a dozen other groups, including:

- Virginia Tech Office of Sustainability
- Virginia Tech Students for Sustainable Practice
- Virginia Tech Environmental Student Organization
- Food Justice at Virginia Tech
- Sustainable Dining at Virginia Tech
- Virginia Tech Office of Alternative Transportation
- YMCA at Virginia Tech
- Student Government Association
- Hokie Bike Hub
- Blacksburg Farmers Market

Each day of Earth Week is themed around an important sustainability topic, such as clean energy, waste and recycling, local food, social justice, and community. The events change each year, but the mission to take action for and celebrate a sustainable campus and beyond is carried through year to year.

Earth Week 2018 events:

- "Connecting to Nature" Workshop in the Hahn Horticulture Gardens
- SolarFest at Glade Road Growing
- "Can the Earth Feed 10 Billion People?" panel discussion
- Campus tree planting on the Drillfield
- Duck Pond and Stroubles Creek Clean Up

Game Day Green Tailgate

The Game Day Green Team promotes tailgate recycling during home football games by passing out recycling bags to tailgaters in the six highest impact parking lots surrounding Lane Stadium, including the Coliseum, Stadium, West Stadium, Track and Field, Chicken Hill, and Litton-Reaves parking lots. The Green Team educates tailgaters on what can and can't be recycled, and how to green their game day experience. During the 2017 football season, nearly 14,000 pounds of recycling was collected.

Ways to green your gameday:

1. Carpool to the game
2. Use propane to grill
3. Bring reusable plates, cups, utensils, grocery bags
4. Recycle glass bottles, aluminum cans, and plastics #1-2
5. Buy in bulk and not single serving snacks to reduce packaging waste
6. Shop local from the Blacksburg Farmer's Market

Green RFP Program

The Green Request for Proposals Program (Green RFP) provides university funds to student-generated sustainability projects. The program solicits proposals from recognized student organizations that promote campus sustainability. Proposals that are funded support the Virginia Tech Climate Action Commitment and produce realizable savings. Since 2010, 65 student proposals have been approved and awarded more than $650,000.

Since 2010, *fyi*

65

student proposals approved and awarded more than

$650,000

The following list of projects were funded in 2016-17 and installed during 2017-18:

- LED lights in Burruss Tunnel - $3,450
- Stroubles Creek riparian restoration buffer - $3,430
- ICTAS II automatic fume hood - $3,500
- OZZI reusable container expansion - $4,880
- LED lighting in Squires Scene Construction Shop - $7,160
- Solar charging table at Pritchard Hall - $27,000
- Water bottle refill stations in Pamplin, Major Williams Hall - $5,000
- Energy saving light switch stickers - $300
- Bike racks for residence hall areas - $16,500
- Bike shelter for Oak Lane Community - $7,000

The following projects were funded in 2017-18 and will be installed during academic year 2018-19:

- President's Quad Residence Halls LED lighting upgrade - $70,070
- Pritchard Hall study lounges LED lighting upgrade- $11,440
- Reusable to-go container expansion - $6,150
- President's Quad exterior LED lighting upgrade - $5,000
- Solar Charging Table - $13,500
- Water bottle refill stations in Cowgill, Burchard Halls - $8,500
- Water bottle refill stations in Latham Hall - $5,000
- Water bottle refill stations in Derring Hall - $2,500
- Stroubles Creek riparian restoration - $5,500
- Native trees for Earth Week 2019 - $5,000
- Old Growth Forest upgrades - $4,800
- Ytoss indoor residence hall collection containers - $1,225
- Pollinator habitats at Hahn Horticulture Garden - $225

Ytoss

Ytoss is the YMCA at Virginia Tech's largest sustainability initiative. At the end of each academic year, collection pods are placed strategically around campus to collect gently-used household items from residence halls, academic buildings, and the surrounding community. Then, at the start of the following academic year, items are re-sold during move-in week at Cassell Coliseum. During the spring 2018 collection, 7 tons of material was diverted from landfill. In past years, the Green RFP Program has provided support through signage and marketing materials to ensure the collection was a success. This year, the Green RFP Program provided funds for year-round indoor collection containers. Items will be collected year-round in select residence halls.

spring 2018

7

tons of material
kept out of the landfill

Energy and Sustainability Committee

Committee Purpose

The Energy and Sustainability Committee is part of the university governance structure. The committee reports to the Commission University Support which reports to University Council. The purpose of the committee is to review and provide advice to the University Administration on broad policy issues relating to the university's pursuit of environmental quality through action, education, and engagement to address current needs without compromising the capacity and needs of future generations.

In 2017, the Committee reviewed and prioritized 17 student Green RFP proposals, and began the process to review and revise university policy 5505; Campus Energy, Water and Waste Reduction.

Sustainability Internship Program

The Office of Sustainability internship program's reach extends to both the campus and the surrounding community. Our vision is to create a sustainability network of student and community leaders throughout Virginia Tech, Blacksburg, and the greater New River Valley. We utilize our campus as a sustainability living-learning laboratory; providing students with experiential learning opportunities to explore real-world problems and lead in the development of innovative solutions. Operations, engagement, and academics are integrated into impactful projects that benefit students and the local community.

The mission of the Student Internship Program is to provide students with valuable opportunities to create lasting, sustainable change at Virginia Tech while developing their professional skills and expanding their knowledge of the inner workings of the university.

The program encourages ownership, creativity, and collaboration to solve some of the toughest sustainability problems our world is facing today. Our program blends real-world projects with practical, skills-based professional development workshops to prepare students for an ever-changing career in the sustainability field.

2016-17 Intern Events

- Turn Down for Watt
- Thrift Swap
- Waste Audit
- Hallowgreen
- Recycling Site Mapping
- Live Green to Save Green
- Stroubles Creek clean up
- RecycleMania

Green Graduates

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630
Green Graduates
in 2017-18

The Green Graduates of Virginia Tech program asks graduating students to take a personal sustainability pledge that encourages them to think about the environmental impact of their jobs, travel, and other adventures after leaving Virginia Tech.

The pledge gives students an opportunity to reflect on the values and lessons they gained during their time on campus and to take them with them as they depart.

By pledging, students are committing to foster sustainable behaviors both in their own lives and in the lives of their friends, family, and coworkers. To honor the students who wish to take such a pledge, the Office of Sustainability awards all pledge signers with a free green cord to wear at graduation. All undergraduate and graduate students are eligible to participate.

In 2017-18, over 630 graduates participated in the program.

FAQs

Do other schools have a graduation pledge?
Yes. Virginia Tech is part of the Graduation Pledge Alliance. There are more than 100 active pledge schools and 125,000 college graduates have taken the pledge.

How do I participate?
Post a quick blurb of how you pledge to support a sustainable world and a photo of yourself to the "Green Graduates of Virginia Tech" Facebook page.

Do I need to be graduating to get the cord?
Yes. December graduation is also included.

Tree Campus USA

Virginia Tech was awarded Tree Campus USA status from the National Arbor Day Foundation in 2008, and since then, over 650 trees have been planted across campus. Plantings primarily take place during Sustainability Week in the fall semester, during Earth Week in the spring semester, and with landscaping associated with new building construction projects.

Virginia Tech was one of the founding member schools of Tree Campus USA program which currently includes over 300 colleges and universities.

STARS: Sustainability Tracking, Assessment and Rating System

The Office of Sustainability has the responsibility to oversee the implementation of the VTCAC. To do this, the office uses the Sustainability Tracking, Assessment, and Rating System (STARS) which is recognized nationally as the premier management tool for colleges and universities to measure sustainability performance. STARS is intended to engage and recognize the full spectrum of colleges and universities - from community colleges to research universities - and encompasses long-term sustainability goals for already high-achieving institutions as well as entry points of recognition for institutions that are taking first steps toward sustainability.

STARS requires the collection of university data and information for 63 sustainability topical areas (called credits) within the following four primary categories:

- Academics
- Engagement
- Operations
- Planning and Administration

An institution may pursue credits that are applicable to its particular context and earn points toward a STARS Bronze, Silver, Gold, or Platinum rating.

Virginia Tech received a STARS Version 2.1 Gold Rating on December 19, 2017. Many university units, spanning the enterprise, support this substantial effort. To date, Virginia Tech's 71.94 points earned for the latest submission represents the highest score earned for all colleges and universities in the Commonwealth of Virginia and for all institutions in the Atlantic Coast Conference.

Virginia Tech received its

second

Gold STARS rating in December 2017

Multi-Modal Transit Facility (MMTF) and Sustainability Showcase

The Multi-Modal Transit Facility (MMTF) is a partnership between the university and the Town of Blacksburg and has been heralded as a sustainability showcase. In the future, the structure will function as a transit hub and will serve multiple modes of transportation.

The LEED project boundary spans from Stanger Street to West Campus Drive, and will transform Perry Street into an expansive pedestrian mall. Features include a rider waiting area with information services, bike repair hub, multi-use meeting space, public restrooms, and administrative space for transit operations. Seventeen covered bus ridership access slips will be located in loop configurations to the east, west, and southwest. Canopied waiting areas include benches, signage, and related amenities. The facility will provide amenities for users, facilitate public interface, disseminate information, and promote alternative transportation.

In Conclusion

Virginia Tech continues to demonstrate its leadership in campus sustainability by making significant progress in every component of the Virginia Tech Climate Action Commitment. Virginia Tech has received its second STARS Gold rating, indicating achievements in several categories including, Academics, Engagement, Operations, and Planning and Administration. Virginia Tech has been recognized by numerous prominent organizations such as the Princeton Review, U.S. Green Building Council, and Sierra Club.

Infrastructure upgrades, highlighted by the conversion to natural gas as the primary fuel source, has resulted in a measurable increase in energy efficiency and a decrease in Greenhouse Gas (GHG) emissions.

The Five Year Energy Action Plan is well underway. The university has 23 LEED Registered Buildings totaling 1.77 million GSF (14 Certified, three occupied and pending Certification, four under construction, and two in design).

Dining Services is consistently ranked among the top five universities nationally for best food by a wide range of publications, and remains committed to advancing sustainability initiatives through initiatives like the OZZI Reusable To-Go Container Program and composting.

Through experiential learning opportunities like the Student Sustainability Internship Program, Green RFP Program, and more, the Virginia Tech campus continues to serve as a living laboratory for students to engage in all aspects of sustainability and gain experiences and values that will stay with them for years to come.

Appendices

Virginia Tech

Is hereby recognized by the Association for the Advancement of Sustainability in Higher Education as a STARS Gold Institution based on its reported accomplishments in campus sustainability.

Awarded on Dec. 19, 2017 and valid for three years.

aashe
The Association for the Advancement of Sustainability in Higher Education

Meghan Fay Zahniser, Executive Director

stars
a program of aashe

Commonwealth of Virginia Locality Recycling Rate Report For Calendar Year 2017

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Address: Sterrett Center, Suite 48 (MC 0629), 230 Sterrett Drive, Blacksburg, VA 24061

Phone #: (540) 231-5184 **Email Address:** dennisc@vt.edu

Summary: Virginia Tech, the Town of Blacksburg, the Town of Christiansburg, and Montgomery County are the four jurisdictional members that comprise the "Montgomery Regional Solid Waste Authority (MRSWA)." Located in Christiansburg, Virginia, MRSWA operates a transfer facility that receives the majority of our principal recyclable materials (PRMs), and all of our municipal solid waste (MSW). MRSWA and all of the four jurisdictional members transitioned to a "Single Stream Recycling System" on July 1, 2015. Our recyclable materials are weighted at MRSWA, and transported to "Recycling & Disposal Solutions (RDS)" located in Roanoke, Virginia. RDS serves as the recycling single stream "hub" for both the Roanoke and New River Valleys. Our municipal solid waste is also weighed at MRSWA, and transported to the local landfill operated by the "New River Resource Authority (NRRA)" located in Pulaski County, Virginia. "Royal Oak Farm (ROF)" collects our food waste for composting in their on campus sledge container which, when full, is transported to their composting facility located near Lynchburg, Virginia. A local vendor collects food waste from our eleven dining facilities and for placement in the sledge container. Our robust construction program maximizes recycling and waste diversion. MRSWA prepares a consolidated recycling rate report for our Region using this DEQ format. Virginia Tech uses the format to determine our base recycling rate, our waste diversion rate and final recycling rate for our Blacksburg, Virginia campus. For CY 2017 our waste diversion rate was 66.8% (waste kept out of the local landfill) and our final recycling rate was 39.2%.

Data in this report was collected from our recycling and solid waste facilities, and from our recycling on campus stakeholders. I certify that I have personally examined and am familiar with the information submitted in this form and any attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete.

Dennis C. Cochrane	Sustainability Program Mgr.	March 30, 2018
Authorized Signature	Title	Date

Locality Recycling Rate Report **For Calendar Year 2017**

PART A: Recycling Rate Calculation - Using the formulae provided below and the information reported on Pages 3, 4 and 5 to calculate your recycling rates.

Step 1: [(PRMs) / (PRMs + MSW Disposed)] X 100 = Base Recycling Rate %

2,050	/	2,050	+	3,956	X 100 =	34.2	%
TONS		TONS		TONS			

Step 2: CREDITS calculation

a. Total Recycling Residue	0 tons
b. Total Solid Waste Reused	20 tons
c. Total Non-MSW Recycled	5,887 tons
CREDITS	5,907 tons

Step 3: [(PRMs – CREDITS) / (PRMs + CREDITS + MSW Disposed)] X 100 = Adjusted Recycling Rate #1*

2,060	–	5,907	/	2,060	+	5,907	+	3,956	X 100 =	65.8	%
TONS		TONS		TONS		TONS		TONS			

"Waste Diversion Rate"
(Waste kept out of landfill)

Step 4: ☐ Source Reduction Credit does not apply; or

☒ **Adjusted Recycling Rate #1 + 2% SRP Credit = Adjusted Recycling Rate #2***

66.8	%	+ 2%	=	68.8	%

Step 5: Final Recycling Rate* for Solid Waste Planning Unit = 39.2 %

* **Total credits resulting from Steps 3 and 4 may not exceed 5 percentage points above the Base Recycling Rate achieved by the Solid Waste Planning Unit.**

Locality Recycling Rate Report **For Calendar Year 2017**
PART B: DATA

Part I: Principal Recyclable Materials (PRMs): Report only PRM material generated within the reporting SWPU and recycled, NOT imported PRMs for recycling.

PRM TYPE	RECYCLED AMOUNT (TONS)
Paper	386
Metal	467
Plastic	0
Glass	0
Commingled (also known as Single Stream)	497
Yard Waste (composted or mulched)	250
Waste wood (chipped or mulched)	150
White Goods	13
Tires	6
Used Oil	1
Used Oil Filters	0
Batteries	5
Electronics	6
Food Waste Organic - Composting	219
Waste Cooking Oil	50
Fluorescent Bulbs & Ballasts	10
Other	
TOTAL PRMs	**2,060 (PRMs)**
	(Enter Total on Page 2, Step 1)

Listing of sources for PRM data ***(consider only Virginia generated waste material)***

1. Permitted solid waste facilities from which MSW disposed/recycled data was collected:
   a. Department of Facilities: Office of Sustainability
   b. Department of Facilities: Operations (Building & Grounds)
   c. Department of Facilities: Capital Construction & Renovation
   d. Department of Environmental Health and Safety
   e. Division of Student Affairs: Dining Services
   f. Division of Student Affairs: Housing and Residence Life
   g. Department of Athletics
   h. Department of Parking & Transportation: Fleet Services
   i. Department of Human Resources

2. Other facilities/operations (not included in #1 above) from which MSW disposed/recycled data was collected:
   a. Montgomery Regional Solid Waste Authority
   b. YMCA at Virginia Tech (Ytoss Program)
   c. _____
   d. _____
   e. _____
   f. _____
   g. _____

Locality Recycling Rate Report **For Calendar Year 2017**

Part II: Credits by Category (see Credits Worksheet, Page 5)

A. Recycling Residue – "Recycling residue" means the (i) nonmetallic substances, including but not limited to plastic, rubber, and insulation, which remain after a shredder has separated for purposes of recycling the ferrous and nonferrous metal from a motor vehicle, appliance, or other discarded metallic item and (ii) organic waste remaining after removal of metals, glass, plastics and paper which are to be recycled as part of a resource recovery process for municipal solid waste resulting in the production of a refuse derived fuel. (§ 10.1-1400 of the *Code of Virginia*) (use only SWPU generation)

MATERIAL DESCRIPTION	FACILITY/OPERATION	TONS OF MATERIAL
_____	from _____	_____
_____	from _____	_____
_____	from _____	_____
	TOTAL RECYCLING RESIDUE	**0**

(Enter Total on Page 2, Step 2 a)

B. Solid Waste Re-Used

MATERIAL DESCRIPTION	REUSE METHOD	TONS OF MATERIAL
Furniture/Appliances	Ytoss 2017 Program (Partnership w/YMCA)	10
Food Donations	Campus Kitchen Program (Dining Services)	10
	TOTAL SOLID WASTE REUSED	**20**

(Enter Total on Page 2, Step 2 b)

C. Non-Municipal Solid Waste (MSW) Recycled

MATERIAL DESCRIPTION	RECYCLING METHOD	TONS OF MATERIAL
Concrete/Masonry	Capital Construction (6 LEED Projects)	1,360
Concrete/Masonry	Demolition Projects (Thomas/Montieth Halls)	2,250
Asphalt	VDOT Roadwork for New Campus Entrance	2,277
	TOTAL NON-MSW RECYCLED	**5,887**

(Enter Total on Page 2, Step 2 c)

D: A credit of two (2) percentage points may be added to the Adjusted Recycling Rate #1 if the Solid Waste Planning Unit has implemented a Source Reduction Program (SRP). Examples of SRPs include Grass-cycling, Home Composting, Clothing Reuse, Office Paper Reduction (duplexing), Multi-Use Pallets, or Paper Towel Reduction. The SRP must be included in the Solid Waste Management Plan on file with the Department:

SRP description: Ytoss 2017 (Partnership with the YMCA at Virginia Tech and the university) collected 10 tons of reusable student residence hall furniture/appliances.

SRP description: Campus Kitchen Program has provided 10 tons of food donations from our dining facilities to families in need in the Blacksburg Community.

SRP description: Student Green RFP Program has provided funding for reusable to-go food Containers for use in four of the major on-campus dining facilities.

(Certify on Page 2, Step 4)

Exclusions: For the purposes of this report, the following materials are not considered solid wastes, and should not be included in any of the data categories utilized in calculating the recycling rate.

1. **Biosolids –industrial sludge, animal manures; or, sewage sludge (unless composted)**
2. **Automobiles – unless part of the Inoperable Vehicle Program (DMV)**
3. **Leachate**
4. **Soils – contaminated soils, soil material from road maintenance**
5. **Household hazardous waste**
6. **Hazardous waste**
7. **Medical waste**
8. **Rocks or stone**
9. **Woody waste derived from land clearing for development, VDOT or easement tree trimming/clearing.**

Part III: Total Municipal Solid Waste (MSW) Disposed** - Report only MSW generated within the reporting jurisdiction(s), NOT imported wastes or industrial wastes.

MSW TYPE	TOTAL AMOUNT of MSW DISPOSED (TONS)
Household	
Commercial	
Institutional	3,956
Other (DO NOT INCLUDE INDUSTRIAL WASTES)	
TOTAL MSW DISPOSED	**3,956**

(Enter Total on Page 2, Step 1 and Step 3)

***Note: MSW DISPOSED** for the purpose of this report means delivered to a permitted sanitary landfill, delivered to a waste-to-energy facility, or managed at a transfer station for transport to a landfill or waste-to-energy facility.*

Locality Recycling Rate Report **For Calendar Year 2017**

Credits Worksheet

I. Reuse of any Solid Waste

√		Material description	Tons
___	PRM		
___	PRM		
___	PRM		
___	Industrial		
___	Construction		
___	Demolition		
___	Debris		
X	Ytoss Program	Res Hall used furniture/appliances	10
X	Campus Kitchen	Donated Food Program (Dining Svcs)	10
___	Other		
		TOTAL TONS	**20**

(enter data on Page 4, Solid Waste Re-Used)

II. Recycling of any Non-Municipal Solid Waste

√		Material description	Tons
X	Construction	Concrete/Masonry (O'Shag Res Hall)	682
X	Construction	Concrete/Masonry (Rector Field Hse)	342
X	Construction	Concrete/Masonry (Sandy Hall)	129
X	Construction	Concrete/Masonry (Davidson Hall)	94
X	Construction	Concrete/Masonry (Lib Arts Bldg)	85
X	Construction	Concrete/Masonry (English Field)	28
X	Demolition	Concrete/Masonry (Thomas/Montieth)	2,250
X	Roadwork	Asphalt (VDOT New Campus Entrance)	2,277
		TOTAL TONS	**5,887**

(enter data on Page 4, Non-MSW Recycled)

III. Inoperable Vehicles Removed and Demolished – include number of vehicles that the localities received reimbursement from DMV under §46.2-1207 of the Code of Virginia.

# of vehicles removed/reimbursement received	___	
Average tonnage per vehicle	X 1 Ton each	
Total Tons	**0**	**(enter data on Page 3, PRMs, Inoperative Motor Vehicle Program)**

NOTE: Check "Exclusions" on Page 5 to avoid listing of those materials on this worksheet and/or in the data fields of this report.

Part C: Recycling Rate Report Instructions

Amended Regulations for the Development of Solid Waste Management Plans (9 VAC 20-130-10 et seq.) require that Solid Waste Planning Units (SWPUs) in the Commonwealth develop complete, revised solid waste management plans. Section 9 VAC 20-130-120 B & C of the Regulations requires that a minimum recycling rate of the total municipal solid waste generated annually in each solid waste planning unit be maintained. It also requires that the plan describe how this rate shall be met or exceeded and requires that the calculation methodology be included in the plan. Section 9 VAC 20-130-165 D establishes that every solid waste management planning unit with populations over 100,000 shall submit to the department by April 30 of each year, the data and calculations required in 9 VAC 20-130-120 B & C for the preceding calendar year. SWPUs with populations of 130,000 or less are only required to report every 4 years (CY years 2016 and forward).

NOTE: ONLY RECYCLING RATE REPORTS FROM AN APPROVED SOLID WASTE PLANNING UNIT (SWPU) WILL BE ACCEPTED FOR PROCESSING. JURISDICTIONS WITHIN A SWPU MUST SUBMIT THEIR RECYCLING DATA TO THE SWPU FOR INCORPORATION INTO THE ANNUAL REPORT.

It is requested that all amounts included on the form be listed in **tons (2,000 pounds)**, rounded to the nearest whole ton. If actual weights are not known, volumes can be converted to weight estimates. To assist you with these estimates, a standardized volume-to-weight conversion table is attached.

Contact Information Section: Please provide information on the Reporting SWPU and information on the individual completing this form. Under Member Governments, please list the local governments identified in the applicable solid waste management plan.
Calculated Recycling Rate Section: Using the formulae provided, calculate your recycling rates for the reporting period from information identified in the Recycling Rate Calculations Section.
Signature Block Section: Please provide an authorized signature prior to submitting the completed form. Authorized signatories include Executive Officer, Administrator, or other legally designated representative of the SWPU reporting entity.
Recycling Rate Calculations Section: Please provide the requested information:

Part I: Principal Recyclable Material (PRM) - Report the amount in tons of each PRM collected for recycling in the named jurisdiction(s) during the reporting period. PRMs include paper, metal, plastic, container glass, commingled, yard waste, waste wood, textiles, tires, used oil, used oil filters, used antifreeze, batteries, electronics, and other materials approved by the Director taken from the Municipal Solid Waste (MSW) generation. A one ton credit may also be entered for each inoperable motor vehicle for which a locality receives reimbursement from the Virginia Department of Motor Vehicles under §46.2-1207 of the *Code of Virginia*. The total weight in **TONS** of all PRMs collected for recycling is represented as **PRMs** in the Recycling Rate Calculation. **New for CY 2015: Provide source information for the PRMs reported on the report (permitted and unpermitted facilities).**

Part II: Credits - Report the amount in **TONS** of each material for which recycling credit is authorized in §10.1-1411.C of the *Code of Virginia*: (i) one ton for each ton of recycling residue generated in Virginia and deposited in a landfill permitted under §10.1-1408.1 of the *Code of Virginia*; (ii) one ton for each ton of any solid waste material that is reused; and, (iii) one ton for each ton of any non-municipal solid waste that is recycled. The total weight in **TONS** of all material for which credits are authorized is represented as **CREDITS** in the Recycling Rate Calculation. A credit of two percentage points of the minimum recycling rate mandated for the Solid Waste Planning Unit (SWPU) may be taken for a source reduction program that is implemented and identified in its Solid Waste Management Plan. Total credits may not exceed five percentage points above the Base Recycling Rate achieved by the SWPU.

Part III: Total Municipal Solid Waste (MSW) Disposed: Report the total amount in **TONS** of MSW that was disposed of by the Solid Waste Planning Unit (SWPU) during the reporting period for each of the source categories (Household, Commercial, Institutional, and Other). For the purpose of this report, "disposed," means delivery to a permitted sanitary landfill or waste incinerator for disposal, and excludes industrial wastes. Industrial waste and by-products should not be included in the MSW or Recycling calculation. The total weight in tons of MSW disposed is represented as **MSW Disposed** in the Recycling Rate Calculation.

Locality Recycling Rate Report Volume to Weight Conversion Table

Material	Volume	Weight in Pounds
Metal		
Aluminum Cans, Whole	One cubic yard	50-74
Aluminum Cans, Flattened	One cubic yard	250
Aluminum Cans	One full grocery bag	1.5
Ferrous Cans, Whole	One cubic yard	150
Ferrous Cans, Flattened	One cubic yard	850
Automobile Bodies	One vehicle	2,000
Paper		
Newsprint, Loose	One cubic yard	360-860
Newsprint, Compacted	One cubic yard	720-1,000
Newspaper	12" stack	7.5
Corrugated Cardboard, Loose	One cubic yard	75-100
Corrugated Cardboard, Baled	One cubic yard	1,000-2,000
Plastic		
PETE, Whole, Loose	One cubic yard	30-40
PETE, Whole, Loose	Gaylord	40-53
PETE, Whole, Baled	30" x 62"	500
Film, Baled	30" x 42" x 48"	1,100
Film, Baled	Semi Load	44,000
Film, Loose	Standard grocery bag	15
HDPE (Dairy Only), Whole, Loose	One cubic yard	24
HDPE (Dairy Only), Baled	32" x 60"	400-500
HDPE (Mixed), Baled	32" x 60"	900
Mixed PET & Dairy, Whole, Loose	One cubic yard	32
Mixed PET, Dairy & Other Aged (Whole, Loose)	One cubic yard	38
Mixed Rigid, No Film	One cubic yard	69
Glass		
Glass, Whole Bottles	One cubic yard	500-1,000
Glass, Semi-Crushed	One cubic yard	1,000-1,800
Glass, Crushed (Mechanically)	One cubic yard	800-2,700
Glass, Whole Bottles	One full grocery bag	16
Glass, Uncrushed to Manually Broken	55 gallon drum	125-500
Arboreal		
Leaves, Uncompacted	One cubic yard	200-250
Leaves, Compacted	One cubic yard	300-450
Leaves, Vacuumed	One cubic yard	350
Wood Chips	One cubic yard	500
Grass Clippings	One cubic yard	400-1,500
Other		
Battery (Heavy Equipment)	One	60
Battery (Auto)	One	35.9
Used Motor Oil	One gallon	7.4
Used Oil Filters (Uncrushed)	55 gallon drum	66 Lbs./Used Oil + 110 Lbs./Ferrous Metal
Used Oil Filters (Crushed)	55 gallon drum	16.5 Lbs./Used Oil + 358 Lbs./Ferrous Metal
Tire - Passenger Car	One	20
Tire - Truck, Light	One	35
Tire - Semi	One	105
Antifreeze	One gallon	8.42
Food Waste, Solid & Liquid Fats	55 gallon drum	412
Electronics: CRT/CPU/Lap Top/TV	Each (avg wt from NCER)	38/6/6/49 respectively
This Table For General Guidance Only.		

ENERGY REDUCTION EFFORTS

The Office of Energy Management, also within the Division of Operations and the Facilities Department, was established to guide the operations of the university to achieve tangible reduction in energy consumption on campus through the development and implementation of various Demand Side Management (DSM) policies, initiatives, and projects. The Office of Sustainability works closely with the Office of Energy Management in pursuit of the shared goals.

Five-Year Energy Action Plan

The Office of Energy Management conducted a benchmarking analysis of campus buildings which identified 50 energy intensive buildings. Representing only 35 percent of the university structures, these buildings account for over 70 percent of the main campus utility cost. Following this study, a comprehensive Five-Year Energy Action Plan was developed in collaboration with the Office of Budget and Financial Planning. The plan guides the facilities operations to achieve significant reduction in energy cost by concentrating on 10 "energy hog" buildings per phase with a goal of completing all 50 buildings in five years. The following five programs are included in the plan:

- Conduct "Back of the Envelope" and "Investment-Grade" Energy Audits
- Improve Steam and Chilled Water Metering Infrastructure
- Implement Energy Conservation Retrofit Projects
- Deploy Energy Data Visualization and Fault Detection Software Tool
- Perform Retro /Re- Commissioning of the Building Automation System

From the day of its commencement in early FY2016, three phases of the 5 year Energy Action Plan has been successfully implemented. An energy cost savings of approximately $6.0 million is estimated through the life of the program.

Demand Side Management

DSM promotes energy efficiency by upgrading, retrofitting, and commissioning mechanical, lighting, and electrical systems in the buildings. As noted above, a Five Year Energy Action Plan was launched to address the energy efficiency improvements with 50 of the most energy intensive buildings. Additionally, numerous other on-going projects are in effect to successfully manage energy consumption on campus. These include:

- Annual combustion testing of boilers and furnaces
- Enhancement of electric sub metering infrastructure
- Fume hood energy reduction programs
- Greenhouse grow-light technology improvements
- Thermal imaging of campus buildings
- Routine light bulb/fixture replacement with LED lights
- Annual Steam Trap survey program
- Annual Inspections of thermal insulation on steam pipes, fittings, and equipment

While DSM is primarily concerned with reducing on site energy consumption and related costs, it has the potential to support the university's commitment to sustainability. The benefits gained from the program include carbon footprint reduction, improvement of indoor air quality, and conservation of resources. The DSM program will help the university to be less vulnerable to sudden changes in the energy market and set its way towards a "net zero energy" future.

Energy Efficient Design

To establish university standards which go beyond the applicable Virginia Energy Code, the Facilities Department has added a section to Virginia Tech's "Design and Construction Standards" that speaks to "Guidelines for Energy Efficient Design." The guide applies to all new construction and new addition and renovation projects and will over time make significant advancements to energy reductions and savings.

Behavioral Energy Reduction Projects

Addressing the behavioral aspect of energy savings allows the Office of Energy Management to directly interact the energy user. The Laboratory Ventilation Energy Reduction Program coupled with the Light Switch Sticker Program encourage the user to participate in energy saving practices such as turning off unused lights and shutting fume hoods when not in use. These projects result in energy savings on a building-wide scale with a low initial cost. The ultimate goal of these projects is to encourage the user to adapt these practices, which will carry forward to the same appliances in other buildings across campus.

Water and Energy Hog Identification

To seek improvements in buildings with high energy or water use, the Office of Energy Management is proactively identifying buildings to classify as energy or water hogs. Once the buildings are identified, a plan can be created to pinpoint the areas of the most use and ultimately take steps towards implementing projects to improve these uses. By actively seeking buildings with high utility usage, Virginia Tech can continue to improve the efficiency of its energy and water use.

Emissions data

CY 2017 Total Emissions (Tons CO2 e): 278,726 (1%)
FY 2018 Total Emissions (Tons CO2-e): 252,101 (-9%)

Why have greenhouse gas emissions declined while the school's population has grown? The answer lies within the sources of energy at Virginia Tech. Coal and oil use has decreased while natural gas use has increased.

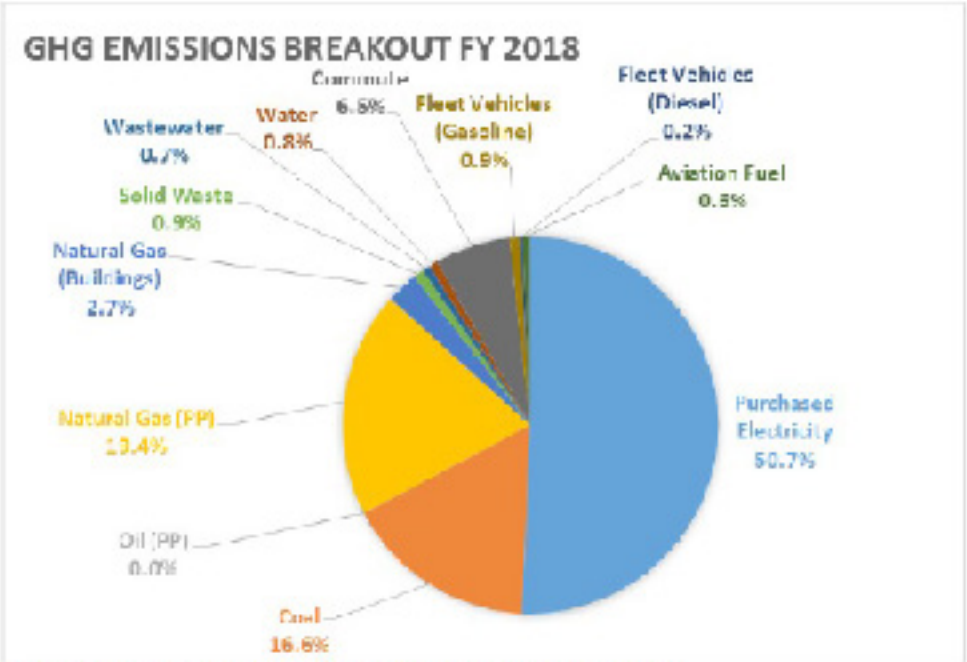


Figure 1 - Sources of GHG emissions at Virginia Tech in fiscal year 2010

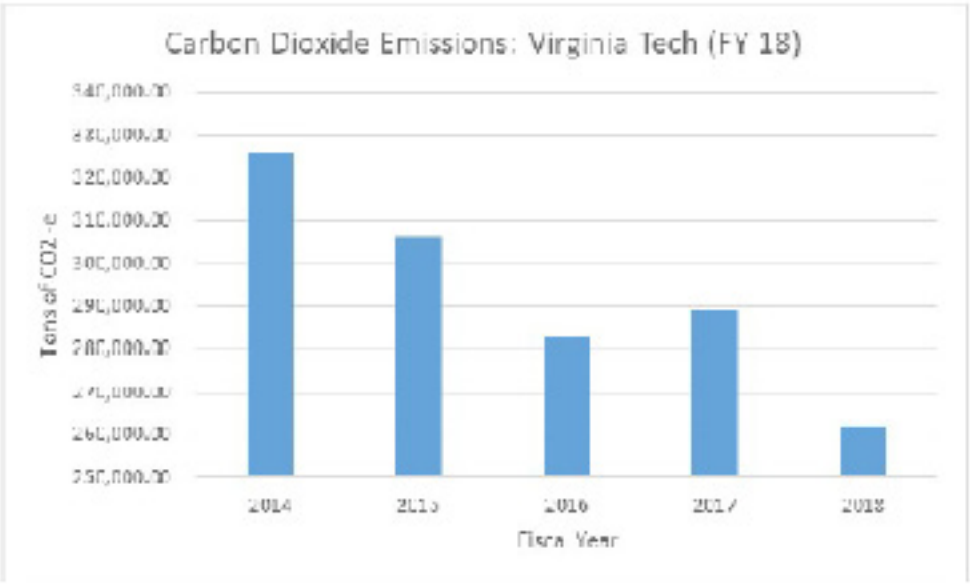


Figure 2 - Virginia Tech's GHG emissions by Fiscal Year

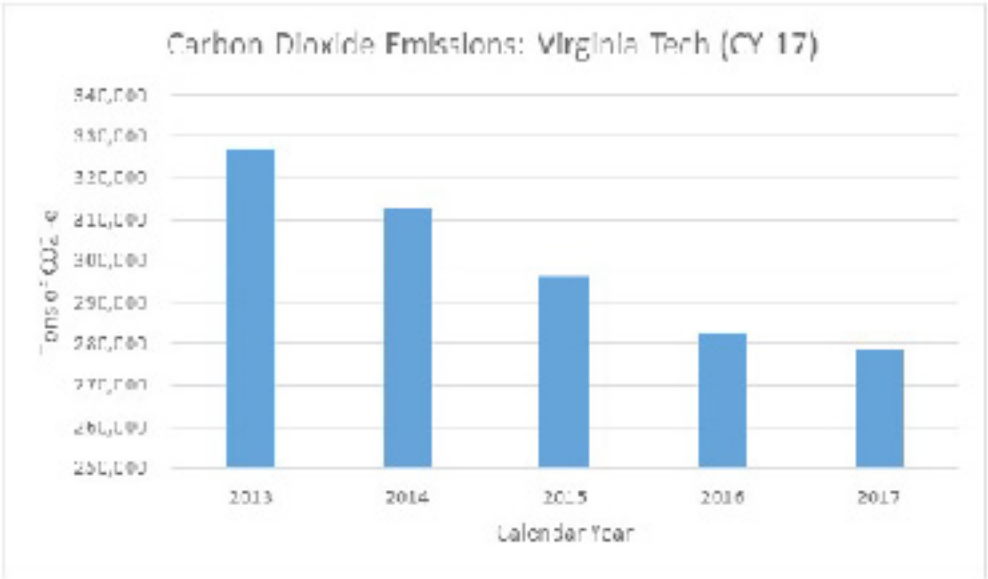


Figure 3 - Virginia Tech's GHG emissions by Calendar Year

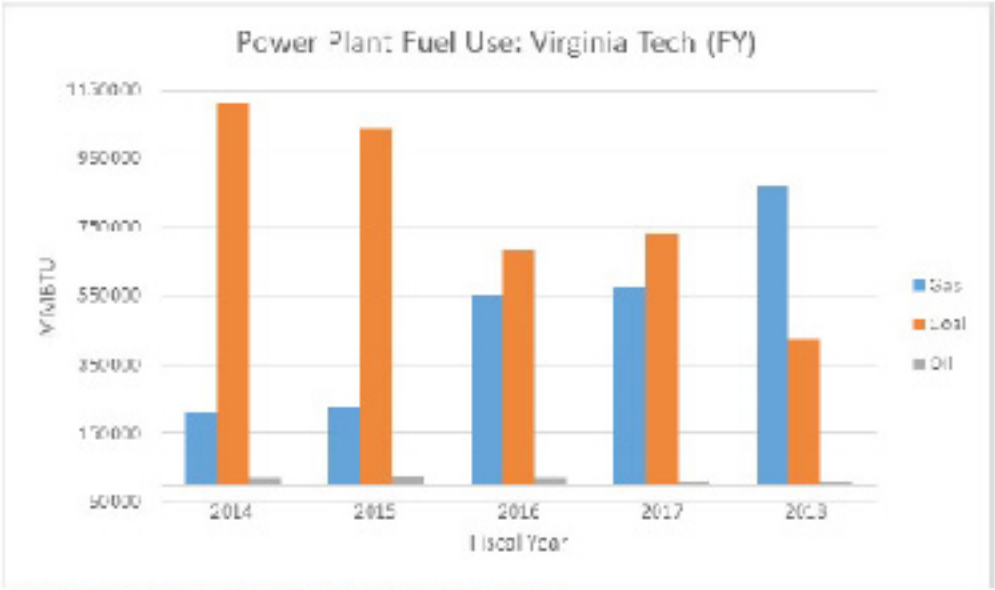


Figure 4 – Virginia Tech's power plant fuel use by fiscal year

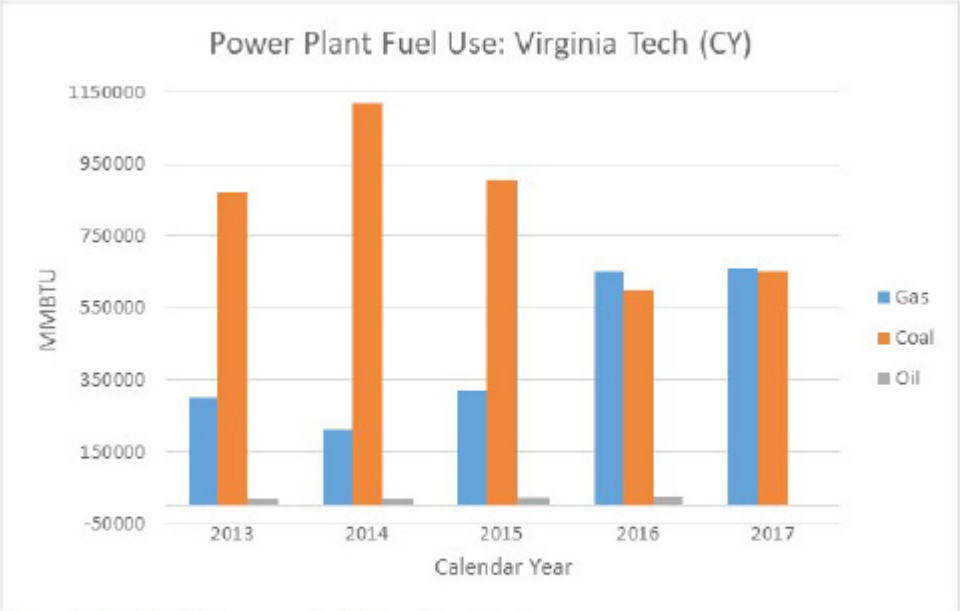


Figure 5 - Virginia Tech's power plant fuel use by calendar year

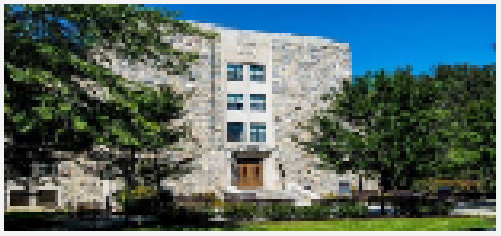
VIRGINIA TECH
LEED PROGRAM SUMMARY

GOODWIN HALL – LEED GOLD
Academic Building - (GSF 154,335)

NORR ARTS CENTER – LEED GOLD
Center for the Arts – (GSF 147,332)

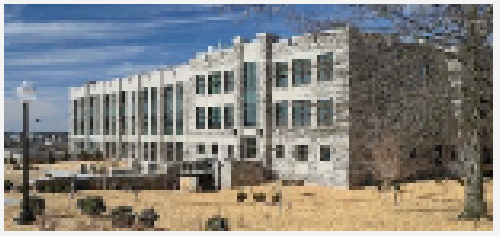
	Number of Buildings	Gross Sq. Ft. (GSF)
❑ Projects Completed:		
✓ LEED Certification - *Achieved*	16	1,302,348
▪ LEED Certification - *Pending*	2	141,475
❑ Projects under Construction:		
▪ LEED *Registered*	5	164,255
❑ Projects under Design:		
▪ LEED *Registered*	4	189,165
❑ Total:	27	1,797,240

AMBLER JOHNSTON HALL – LEED GOLD
Residence Hall (GSF 285,483)



OFFICE OF SUSTAINABILITY
FACILITIES DEPARTMENT

HUMAN & AGRICULTURAL BIOSCIENCES BUILDING I – LEED GOLD
Research Building (GSF 83,860)



VIRGINIA TECH LEED BUILDINGS STATUS AS OF 09/06/2018

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION ACHIEVED	DATE OF CERTIFICATION
PROJECTS COMPLETED - LEED CERTIFICATION ACHIEVED								
Henderson Hall Renovation & Theater 101 Addition	208-16758-001	$15,030,782	39,750	02/18/08	08/14/09	Project Complete	Gold	02/01/10
Football Locker Room Addition	208-L10018-001	$14,004,621	42,145	07/05/05	08/21/11	Project Complete	Silver	10/01/11
Institute for Critical Technology & Applied Science Ph II (ICTAS II)	208-17291-400	$34,582,210	42,100	04/08/09	04/06/11	Project Complete	Gold	11/01/11
Visitors & Undergraduate Admissions Center	208-L10018-001	$11,338,192	18,155	03/23/10	08/25/11	Project Complete	Certified	08/01/12
Academic & Student Affairs Building (Lavery Hall)	208-17859-400	$44,382,610	77,201	07/29/10	08/05/12	Project Complete	Silver	04/01/13
Vet Med Instructional Addition	208-19791-400	$12,343,316	24,800	07/26/11	11/05/12	Project Complete	Silver	06/01/13
Ambler Johnston Hall - Improve Residential & Dining Halls	208-17557-400	$66,068,670	269,483	05/26/09	08/25/12	Project Complete	Gold	11/01/13
Chiller Plant Phase I (Southwest Chiller Plant)	208-17657-400	$28,087,729	16,655	03/22/12	08/14/13	Project Complete	Silver	11/01/13
Moss Arts Center (Center for the Arts)	208-16758-402	$100,007,000	147,382	08/10/10	08/21/13	Project Complete	Gold	05/01/14
Human & Agricultural Biosciences Building I (HABB)	208-17681-400	$53,759,344	93,850	12/22/11	03/10/14	Project Complete	Gold	04/17/15
Indoor Athletic Training Facility	208-17296-400	$21,310,000	31,800	04/23/14	05/25/15	Project Complete	Silver	10/05/15
Goodwin Hall (Signature Engineering Building)	208-17658-400	$95,218,249	154,835	03/13/11	05/28/14	Project Complete	Gold	10/26/15
Renovate Davidson Hall	208-17662-400	$32,013,000	44,845	02/17/12	05/09/14	Project Complete	Certified	03/11/16

VIRGINIA TECH LEED BUILDINGS STATUS AS OF 09/06/2018

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION ACHIEVED	DATE OF CERTIFICATION
PROJECTS COMPLETED - LEED CERTIFICATION ACHIEVED								
Pearson Hall (Upper Quad Residential Facilities)	208-L00031-000	$45,500,000	111,191	10/14/13	01/24/17	Project Complete	Silver	12/16/16
Oak Lane Phase IV	208-L00021-002	$5,132,300	20,508	08/29/11	01/04/2013	Project Complete	Silver	10/04/17
New Cadet Hall (Upper Quad Residential Facilities)	208-L00031-000	45,000,000	108,765	10/14/2013	4/27/2017	Project Complete	Silver	05/01/18
Total GSF:			1,302,345					

VIRGINIA TECH LEED BUILDINGS STATUS AS OF 09/06/2018

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION PENDING	DATE OF CERTIFICATION
PROJECTS COMPLETED - LEED CERTIFICATION PENDING								
New Classroom Building	208-17995-000	$40,851,740	72,275	01/26/15	08/17/16	Project Complete	Silver	Pending
O'Shaughnessy Hall Renovations	208-L00044-000	21,593,211	69,200	5/17/2017	8/1/2018	Construction	Silver	Pending
Total GSF:			141,475					

VIRGINIA TECH LEED BUILDINGS STATUS AS OF 09/06/2018

5.

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION ANTICIPATED	DATE OF CERTIFICATION
PROJECTS UNDER CONSTRUCTION LEED REGISTERED								
Sandy Hall (Renovate/Renew Academic Bldgs.)	208-18065-000	$30,563,000	19,889	01/04/17	-	Construction	Silver	-
Liberal Arts Building (Renovate/Renew Academic Bldgs.)	208-18065-000	(see above)	15,394	01/04/17	-	Construction	Silver	-
Davidson Hall (Renovate/Renew Academic Bldgs.)	208-18065-000	(see above)	25,151	01/04/17	-	Construction	Silver	-
Rector Field House (Athletic Facilities Improvements)	208-L00037-001	$18,595,000	13,949	12/1/2016	3/1/2018	Construction	Silver	-
Baseball Facilities (Athletic Facilities Improvements)	208-L00037-002	$18,496,000	49,872	2/1/2017	2/3/2018	Construction	Silver	-
Total GSF:			154,255					

VIRGINIA TECH LEED BUILDINGS STATUS AS OF -/-/2018

6.

PROJECT	PROJECT #	BUDGET	GSF	CONSTRUCTION START	OCCUPANCY DATE	STATUS	LEED CERTIFICATION ANTICIPATED	DATE OF CERTIFICATION
PROJECTS UNDER DESIGN - LEED REGISTERED								
Corps Leadership & Military Science Building	208-L00043-000	$40,000,000	60,500	-	-	Design	Silver	-
Multi-Modal Transit Facility	CP-2029	TBD	13,713	-	08/15/20	Design	Platinum	-
Holden Hall Renovation	208-16267-000	$3,900,000	101,240	-	TBD	Design	Silver	-
Undergraduate Science Laboratories Renovation (Derring Hall)	208-L00046-000	$10,000,000	23,712	-	07/01/21	Design	Silver	-
Total GSF:			199,165					

FACILITIES
VIRGINIA TECH

2017-18 Sustainability Annual Report

Office of Sustainability
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Blacksburg, VA 24061

540-231-4300
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